
SOLID F166 HD

Operator's Manual

Engine Information



MICROPLEX®

Edition 1.0

Copyright and Trademark Notices

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Documentation Conventions

This document uses the following conventions.

【Note】

Notes contain important information.



CAUTION

Caution messages appear before procedures, which, if not observed, could result in damage to parts and consumables.



WARNING

Warning messages alert the reader to a specific procedure or practice, which, if not followed correctly, could cause personal injury.

Regulation Statements and Notices

This product is not for use at visual display work places.

FCC Statement and Notice

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Caution

Changes or modifications not expressly approved by the party responsible for compliance to the FCC Rules could void the user's authority to operate this equipment.

Canadian Department of Communications Compliance Statement

This equipment does not exceed Class A limits per radio noise emissions for digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Avis de conformité aux normes du ministère des Communications du Canada:
Cet équipement ne dépasse pas les limites de Classe A d'émission de bruits radioélectriques pour les appareils numériques telles que prescrites par le Règlement sur le brouillage radioélectrique établi par le ministère des Communications du Canada.

Declaration of Conformity for EU Countries

We, MICROPLEX Printware Corp., do hereby declare that this KPOWR printer conforms to the requirements of Directive 2006/95/EC and 2004/108/EC.

Compliant with Regulatory Certification



Safety Information

Thanks for using MICROPLEX product. MICROPLEX Printware Corp.. is an ISO 9001 certified manufacturer. It's our responsibility to inform users about the following safety information:

Safety Instructions

- 1. Installation:** After moving the printer, examine the power cord and confirm good connection of each connector before turn on the printer. Make sure the four level feet of the printer kept at the same level. To prevent from causing damage to the printer, do not incline or shake the printer.

- ☆ Do not put the printer near direct sunlight.
- ☆ Do not place the printer near heating source.
- ☆ Do not put the printer near air conditioner, fan or any heating air exit.
- ☆ Do not place the printer near dusty location and vibration.
- ☆ Do not put the printer near combustibles.
- ☆ Do not place the printer on any unstable surface.
- ☆ Do not plug in too many power cords or multiple outlet.
- ☆ Avoid drastic temperature change to maintain print quality.
- ☆ Do not place the printer in an environment of temperature or humidity extremes. Environment required for normal printer performance:
 - ※ Temperature: 15 °C to 30 °C
 - ※ Humidity: 30% ~ 80% RH
- ☆ Install the printer in a well air-conditioning room.
- ☆ Periodic examination of the followings:
 - ※ Does the plug abnormally overheat?
 - ※ Does the AC power cable break?
 - ※ Is there a bad connection of the plug and outlet?

【Note】 A proper environment assists better print quality and printer performance as well as extension of printer life.

- 2. Operation:** This printer is a high-tech product. Please comply with the manual to handle parts, consumables, and engine. Please employ correct ways and steps to operate the printer carefully. Do not open the front door while the printer is printing.

3. **Storage:** Please follow the instructions on the manual and provide a proper environment for storage of paper, parts, consumables and engine; and be aware of the expiration date of each item. When intend not to use the printer for a long period of time, clean the entire printer then remove the consumables and put into boxes for proper storage.
4. **Consumables:** Please use MICROPLEX's consumables to ensure the engine function and life as well as the print quality.

Before deliver developing unit, make sure the toner cartridge is removed and the toner remained inside the toner hopper, if any, is cleared by vacuum cleaner.

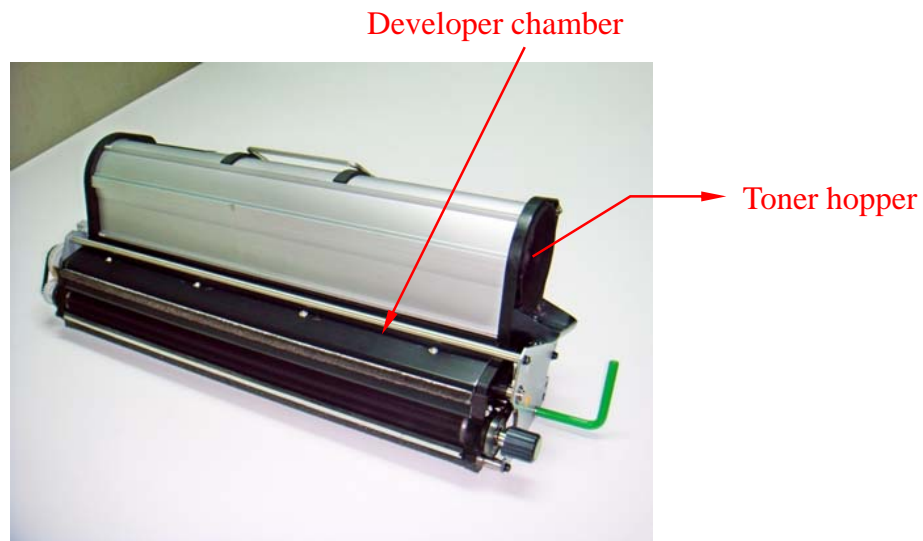


Fig. S-4_1

Then use the vacuum cleaner to clear the toner remained on the toner supply roller (sponge roller) while use a slotted (-) screwdriver to turn the gear of the toner supply roller.

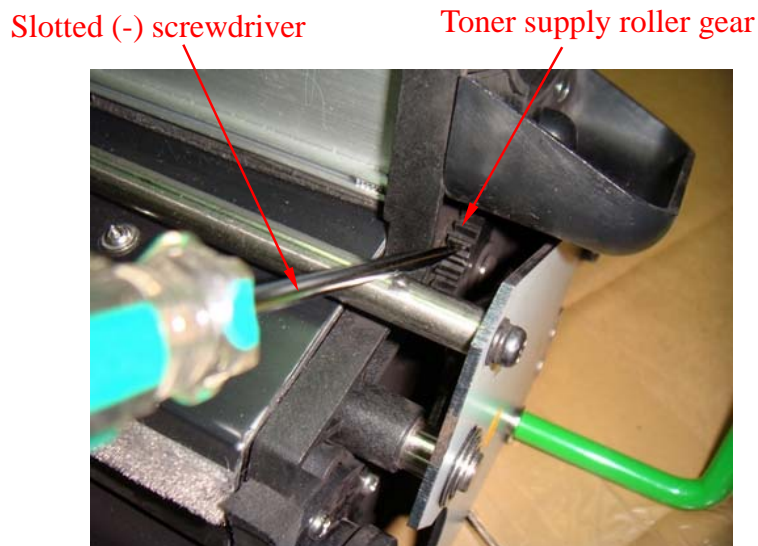
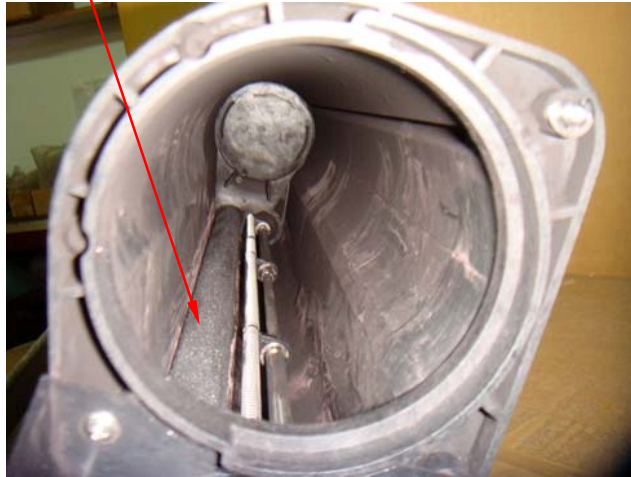


Fig. S-4_2

Toner supply roller (sponge roller)

**Fig. S-4_3**

Disclaimers

Please follow all warnings, precautions, and maintenance as recommended in this manual to maximize the life of this MICROPLEX printer. If users do not employ correct ways and steps to store and operate MICROPLEX printers, and/or use non-MICROPLEX parts and consumables, MICROPLEX Printware Corp.. disclaims the responsibility of product guarantee. If you have any questions on operating the printer, please contact our customer service department.

Warning Label Explanations

This printer contains the following warning labels. Please follow all warnings and precautions to ensure your safety.



Moving parts. Do not touch while printing.
Keep hands clear while printing.



Hot surface. Do not touch.
Allow surface to cool before servicing to avoid possible skin burns.



Glare. Do not stare.
Continuous flashlight while printing. Do not stare the flashlight to avoid eyesight damage.

CAUTION

Be aware of high voltage on chargers while printing.

CAUTION: Be aware of high voltage on chargers while printing.
High voltage is inside chargers while printing. Contact may cause electric shock or burn.

CAUTION

Before drum installation, ensure the transfer elevator is in down position and the notch on the shaft is horizontal to prevent the drum from being damaged.

CAUTION: Before drum installation, ensure the transfer elevator is in down position and the notch on the shaft is horizontal to prevent the drum from being damaged.

CAUTION

Do not touch fuser unit cover glass.

CAUTION: Do not touch fuser unit cover glass.

The fuser unit cover glass becomes very hot after operation. Contact may cause burn. Do not touch. Allow the fuser unit cover glass to fully cool before servicing.

WARNING

HIGH TOUCH CURRENT
EARTH CONNECTION ESSENTIAL
BEFORE CONNECTING SUPPLY

WARNING: High touch current

High touch current. Earth connection essential before connecting supply.

**DANGER**

High Voltage

DANGER: Electrical shock

High voltage inside. Risk of electric shock or burn. Turn off and disconnect system power before servicing.

Turn off the power switch and circuit breaker and wait 10 minutes before detaching or installing.

Turn off the power switch and circuit breaker and wait 10 minutes before detaching or installing.

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Chapter 1

Overview

1.1 Features

SOLID F166 HDlaser printer is a high-quality page printer, which is appropriate for text and image printing.

- (1) High Speed—SOLID F166 HDprinter has an excellent performance of high speed printing. Printing text, image and graphic is certainly at full speed.
- (2)High Quality — SOLID F166 HDprinter employs LED array electrophotography process. The 600 x 600 DPI printing resolution attains high print quality.
- (3) Automatic Paper Loading—SOLID F166 HDprinter contains automatic paper loading mechanism that can reliably feed fanfold paper easily.
- (4)Flat Paper Path—SOLID F166 HDprinter employs flat paper path, which is ideal for label printing.
- (5) Easy Maintenance — Consumables such as toner, OPC drum, and developing unit are cartridge-designed for easy replacement by users.
- (6) Low Printing Cost—SOLID F166 HDprinter can print data and forms simultaneously, which reduce the efforts of form management and consequently decrease the printing cost.

1.2 Components

(1)External View

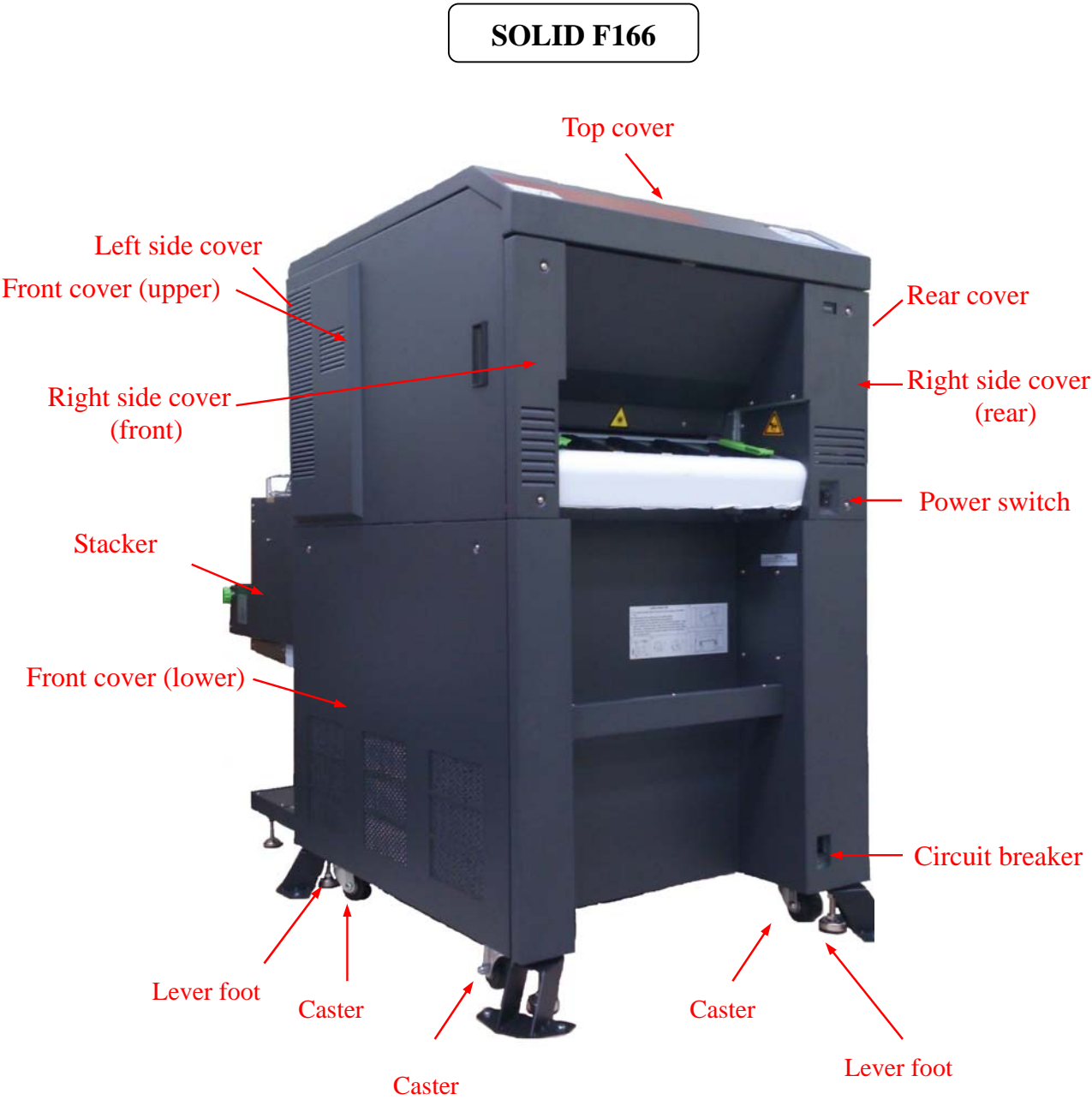


Fig. 1-1

SOLID F166

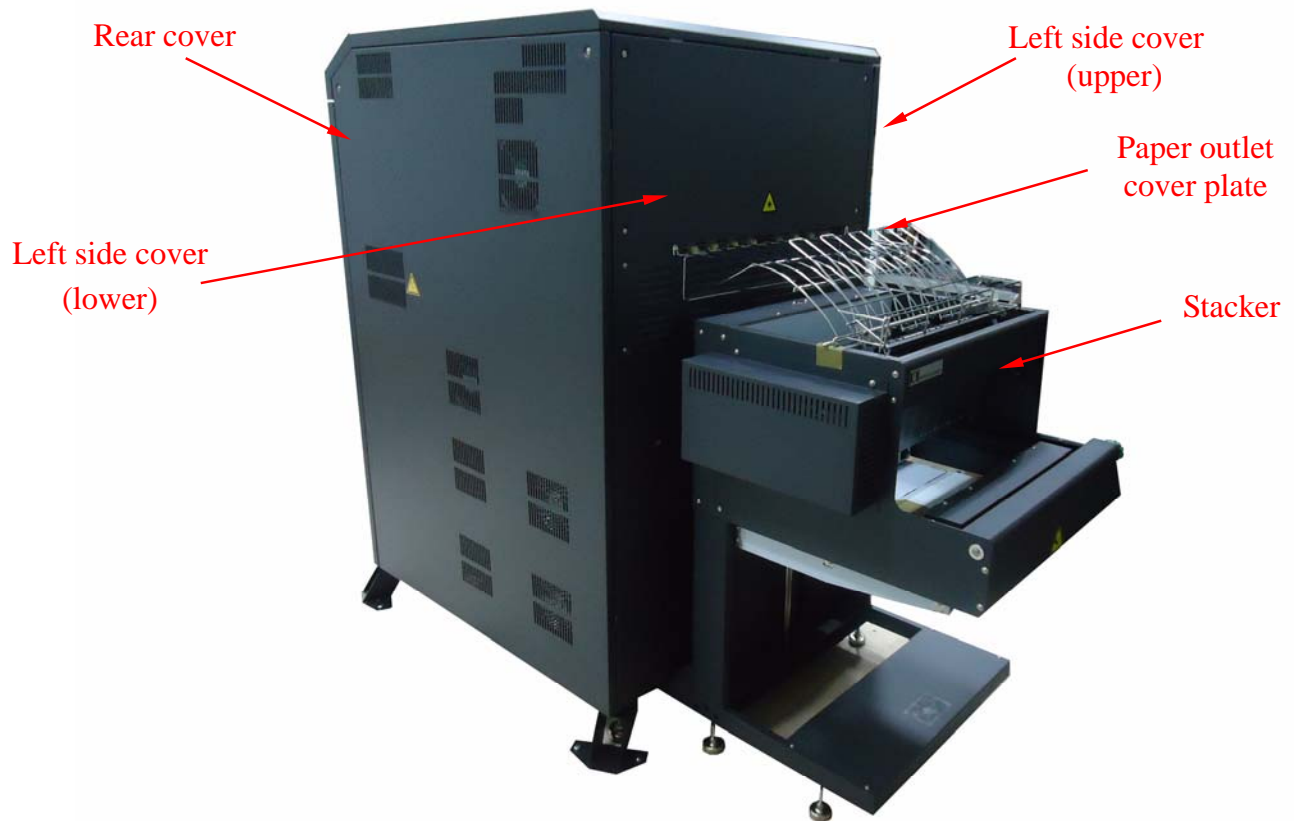
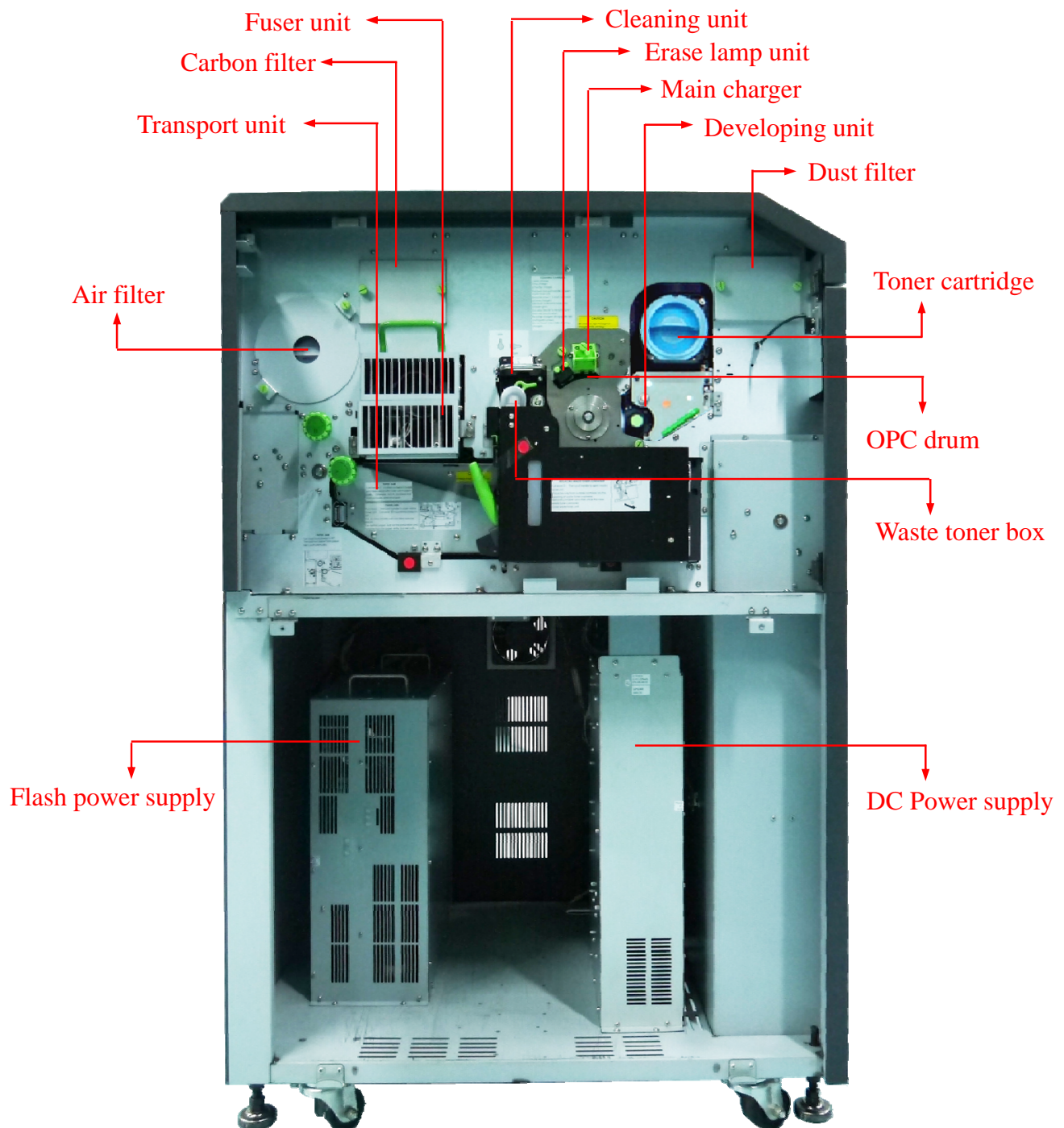
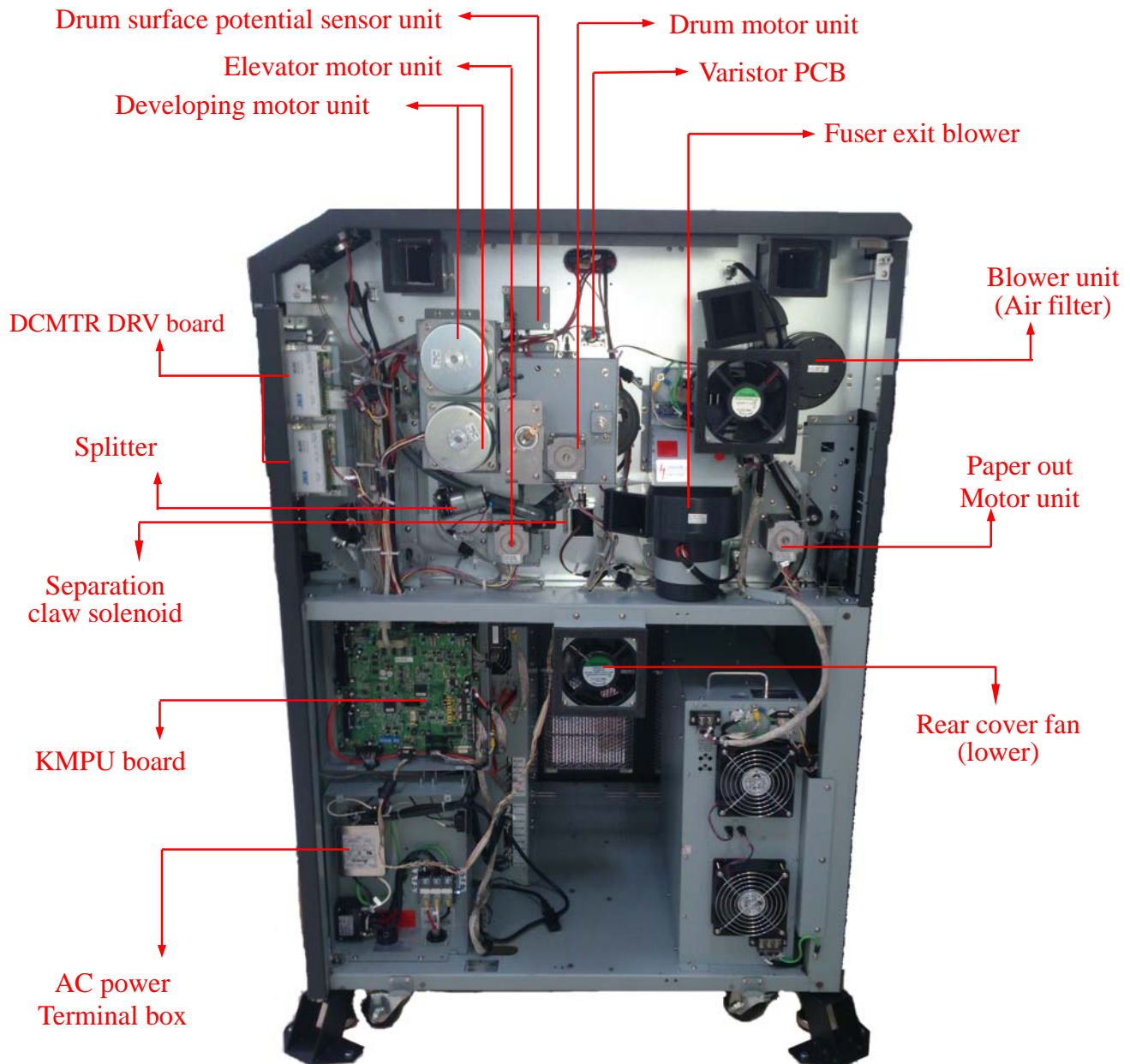


Fig. 1-2

(a) Inside the Front Cover

**Fig. 1-3**

(b) Inside the Rear Cover

**Fig. 1-4**

(2) Principles of Laser Printers

Laser printers employ an electrophotographic system. This system utilizes a main charger to expose the pre-charged photoconductive photoreceptor drum surface to the print image light, develops the print image on the drum surface with a developing unit, causes toner to adhere to the electrostatic latent image formed on the drum surface, electrically transfers the toner on the drum surface onto paper with a transfer unit, and fixes the transferred image with a fuser unit.

(3) Sensor System Description

The sensor system of SOLID F166 HD Series is shown in the following figures.

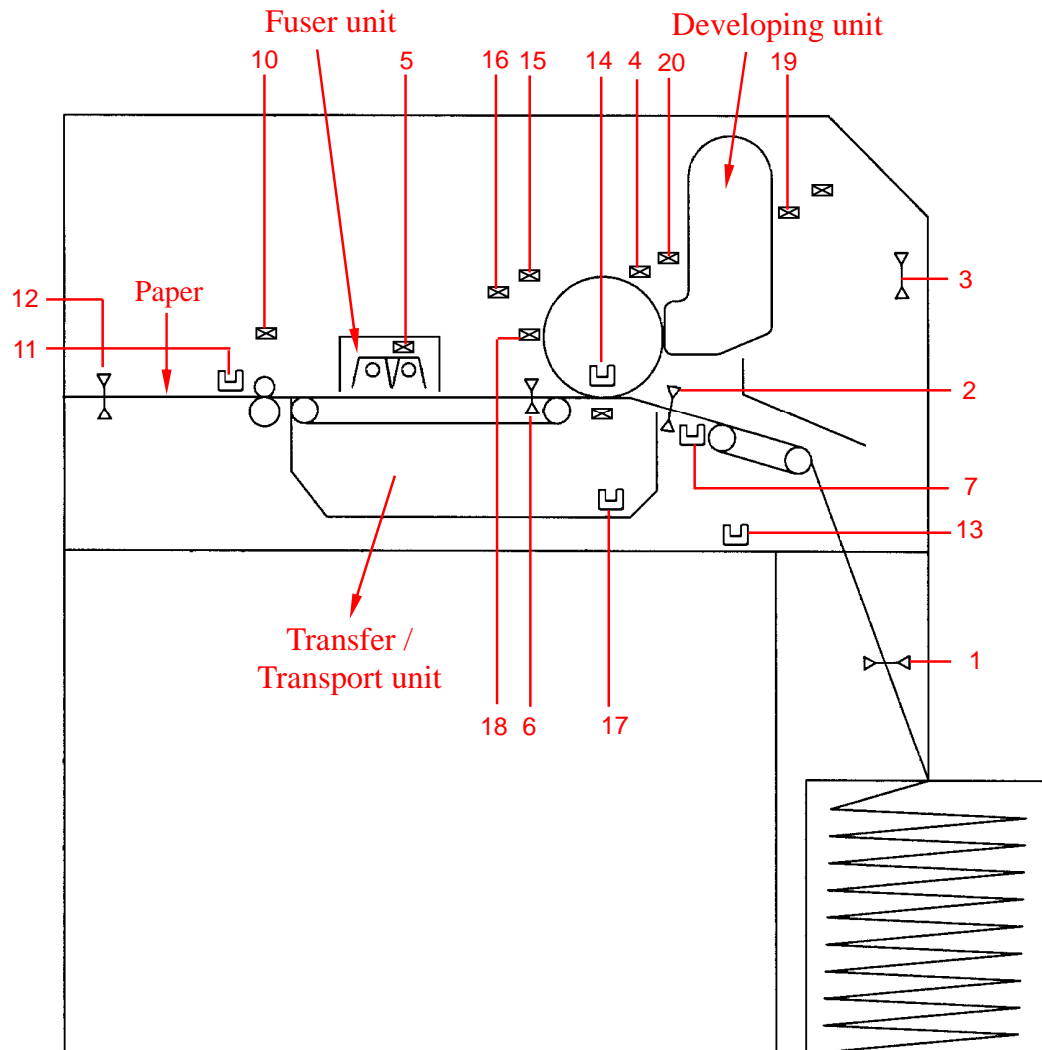


Fig. 1-5

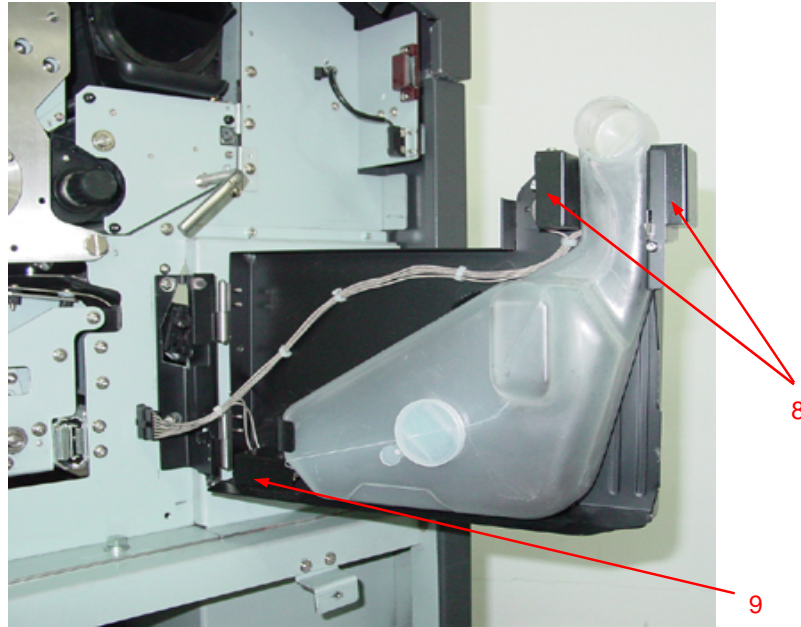


Fig. 1-9_2

1. Paper Empty Sensor (PES) <Cross Sensor>
2. Paper Top Sensor (PTS) <Sensor PS-R50D>
3. Front Cover Sensor (FRT-COVER)
4. Drum Surface Potential Sensor (DSPS)
5. Lamp Thermistor Sensor
6. Paper Transport Position Sensor (PTPS) <Sensor PS-R50D>
7. Splitter Sensor (SHS, SRS)
8. Waste Toner Full Sensor (WAS-BOXR.WAS-BOXT)
9. Waste Toner Box Set Sensor (WAS-SET) <Micro Switch>
10. Scuff Roller Open/Lock Sensor<Micro Switch>
11. Paper Moving Sensor (PMS) <Interrupt Sensor>
12. Paper out Position Sensor (POPS) <Sensor PS-R50D>
13. Paper in Encoder (PI-ENC) <Interrupt Sensor>
14. Drum Motor Encoder (DRM-ENC) <Interrupt Sensor>
15. Cleaning Unit Set Sensor (CLN-UNIT) <Micro Switch>
16. Cleaning Unit Lock Sensor<Micro Switch>
17. Transfer Unit Upper Limit Sensor<Interrupt Sensor>
18. Pre-Charger Set Sensor<Micro Switch>
19. Developing Unit Set Sensor<Micro Switch>
20. LED Array Thermal Sensor

1.3 Specifications

General Scope	
Print speed	3500 / 5500 lines/minute (6LPI)
Print method	Electrophotography process, LED array
Resolution	300 × 300 DPI / 600 × 600 DPI
Print width	17 inches max.
Paper feed rate	247 mm, 388 mm /second
Photosensitive material	OPC drum
Interface	Video interface
Developing method	Dry, two-component developer
Cleaning system	Blade-type cleaning system
Fusing method	Flash fusing with Xenon lamp
Paper feed:	Tractor feed (automatic paper loading without waste of paper) Suction belt feed
Input	
Transport	
Printing	Face up print
Paper hopper	3000 sheets (64g/m ²)
Stacker capacity	3000 sheets (64g/m ²)
Dimension	780 mm (W) × 1360m (H) × 890mm (D)
Dimension with stacker	780 mm (W) × 1360m (H) × 1520mm (D)
Weight	255 kg (275 kg with stacker)

Power	
Power supply	AC200V~230V, 25A, 50 / 60 Hz Single phase, 3 wires
Power consumption	5.5 KVA max. 0.6 KVA max.
Operating	
Standby state	

Paper	
Type	Fanfold paper (standard)
Page length	7 to 20 inches
Page width (Fanfold paper)	6 to 18 inches (When the power stacker unit is used, paper length range is 7 to 14 inches).
Weight	60~204 g/m ²

Environment	
Temperature	Operating : 15 to 30 °C Non-operating : -10 to 35 °C
Humidity	Operating : 30 to 80% RH Non-operating : 10 to 80% RH (non-condensing)
Inclination of floor	1° (angle) max.

Reliability	
Monthly duty cycle	600K pages (11" length) 1200K pages (A4 2-up)
Mechanical life	5 years or 36,000,000 pages (11" length)
Warm-up time	60 seconds max.
First page print time	25 seconds max.
MTBF	2,000 hours
MTTR	less than 1 hour

Chapter 2

Environment

2.1 Printer

(1) Installation space :

The following figure exhibits the printer dimensions, and the required operation zone and maintenance zone.

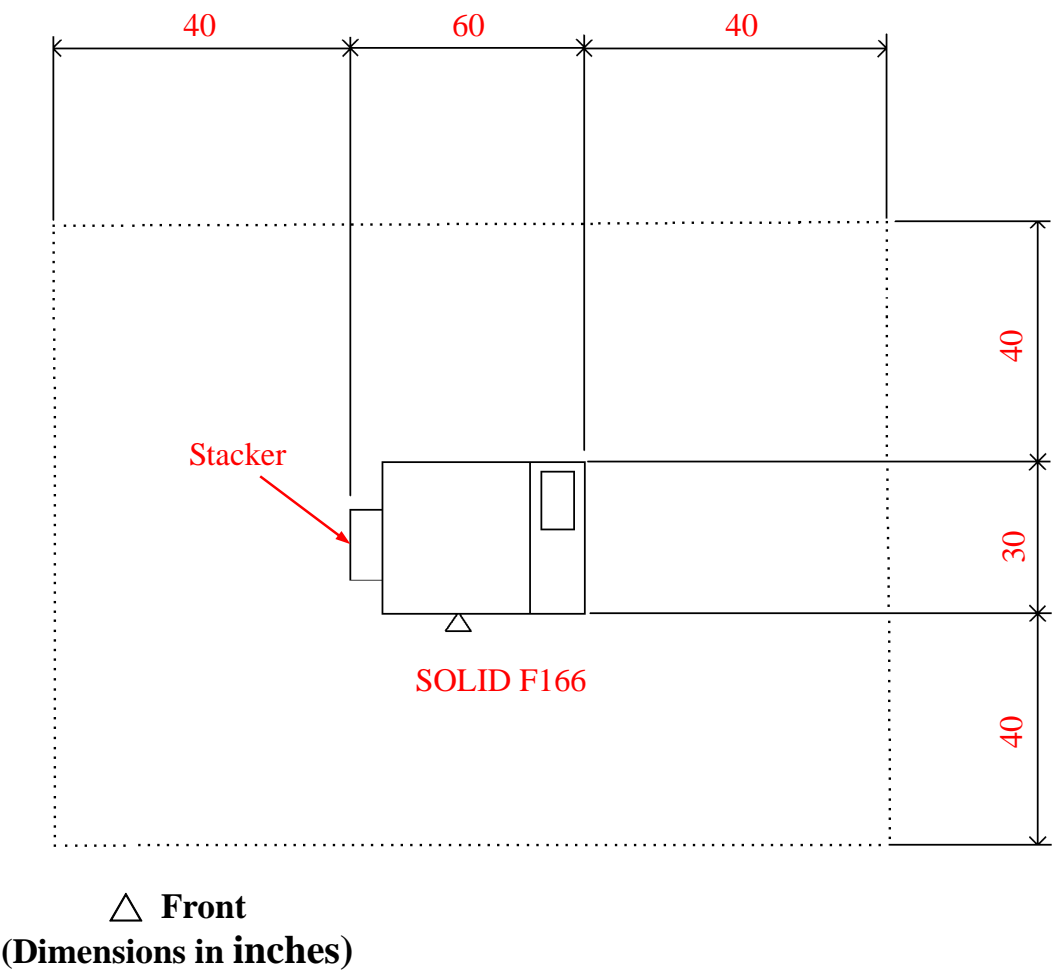


Fig. 2-1

(2) Connecting to a Host

Install the printer on a proper and safe location where the host and power source is accessible. Before connect or disconnect any cable, turn off the printer power and circuit breaker (see section "3.2 Power on") to prevent from burning the circuit board.

2.2 Paper

(1) Paper Specifications

- (a) Weight 60 ~ 204 g/m²
- (b) Size Length: 7 ~ 20 INCH
 Width: 6 ~ 18 INCH
- (c) Others Be aware of the print area of perforation.

(2) Print Width 17 inches max.

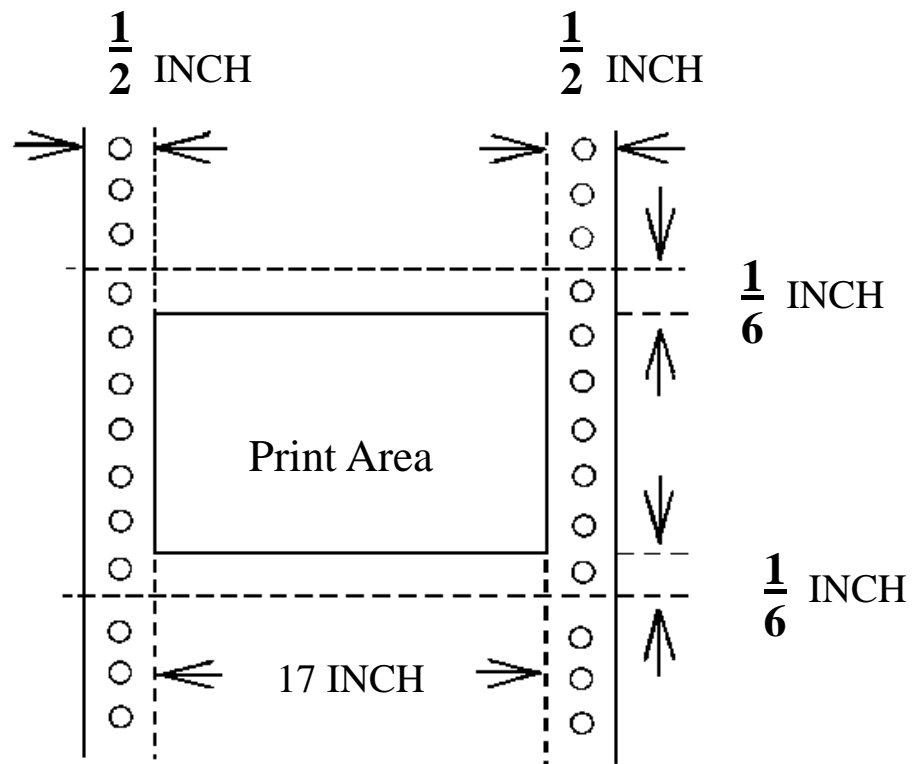


Fig. 2-2

Chapter 3

Operation

3.1 Operation Panel

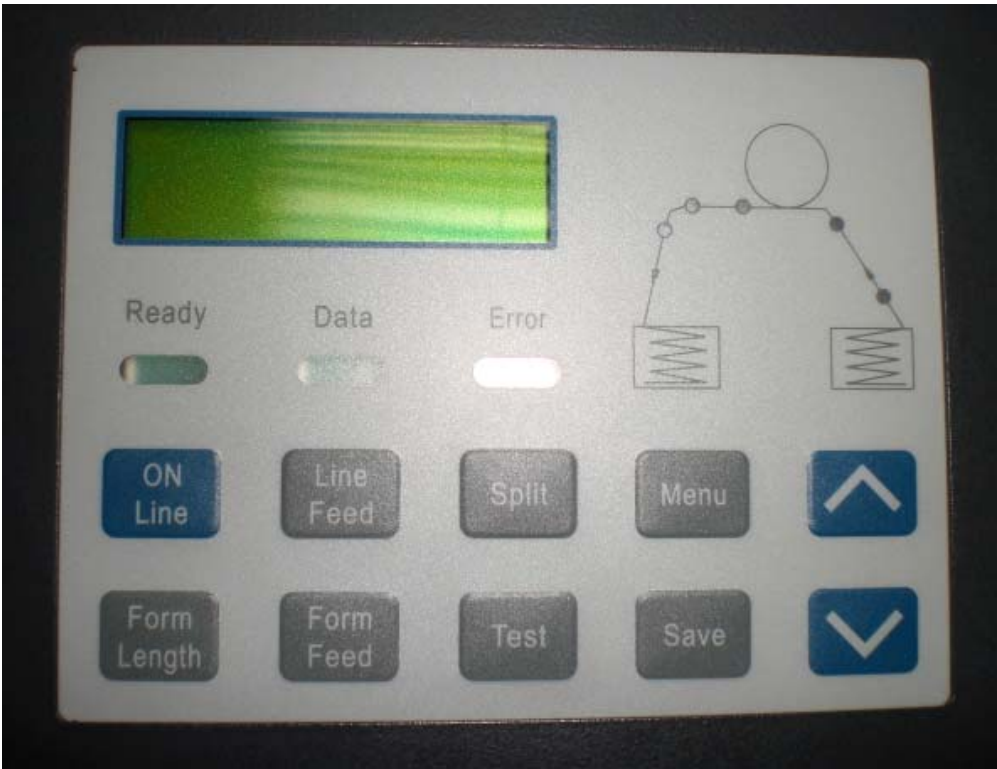


Fig. 3-1

(1) Function Keys

ON LINE	No error exists: Set the printer in the on-line or off-line state. Error exists: Clear the error message.
FORM LENGTH	Set paper length.
LINE FEED	Manually feed paper by 1／12 INCH.
FORM FEED	Manually feed paper by one page.
SPLIT	Split fanfold paper.
TEST	Self-test.
MENU	Enter or exit the main menu.
SAVE	Set the value of the selected function.
∧	Select previous sub menu or increase the value.
∨	Select next sub menu or decrease the value.

(2) Status Indicators

READY (GREEN)	Off: Printer is warming up. On: Printer is in the on-line state. Out: Printer is in the off-line state.
DATA (GREEN)	Blinking: Data is in buffer when printer is ready. On: Data is in buffer when printer stops. Out: No data is in buffer.
ERROR (RED)	On: Error is occurring. On: Error is cleared but the printer is not in the on-line state. (The operator has to press the "ON Line" key to clear the error message. Meanwhile, "Line Feed" key is applicable) . Out: No error exists.

3.2 Power on

Turn on the circuit breaker firstly. Then turn on the power switch to start the printer.

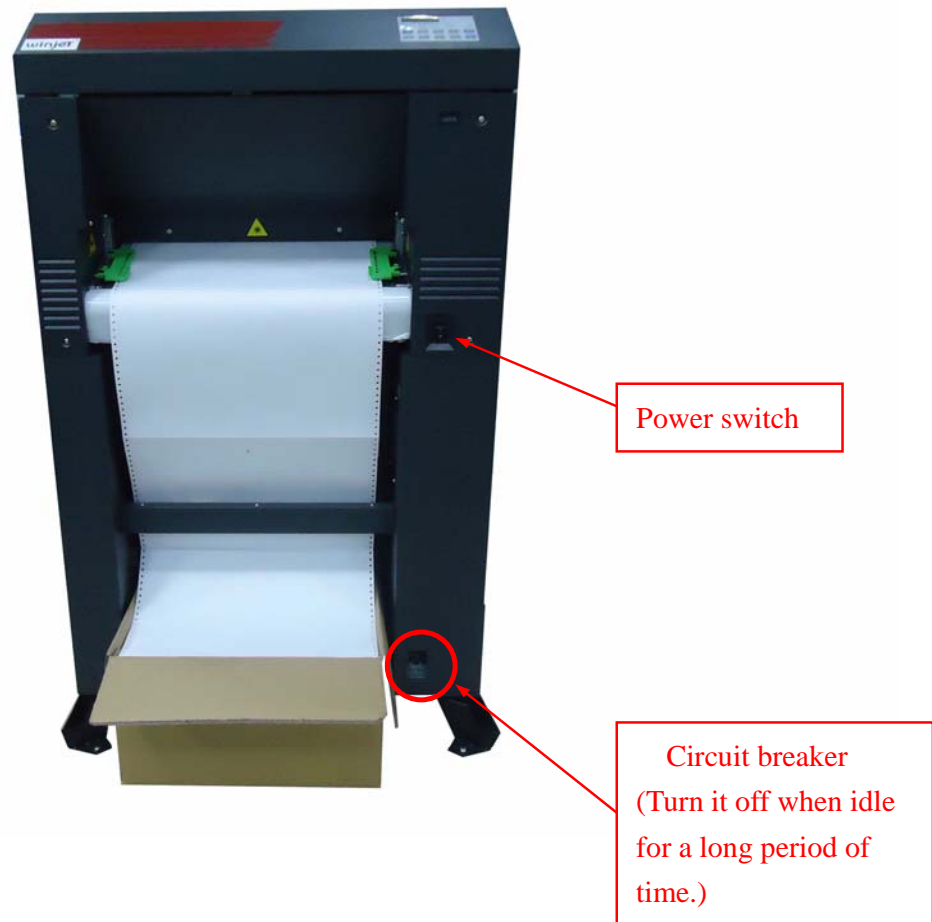


Fig. 3-3

After the power is on, the LCD screen on the operation panel displays "WARM UP". Then the green light of the status indicator "READY" is on, the printer is ready to print.

【Note】 If the printer is not in the "READY" state after warming up, some errors exist. Clear the errors according to the message displayed on the LCD screen then restart the printer.

3.3 Paper Handling

(1) Paper Setting

- (a) Make sure the left tractor is set at the left end, and align the left side of the paper carton with the alignment mark.



Fig. 3-4



Fig. 3-5

- (b) Supply the fanfold paper between the paper empty sensor guide and the printer body. Make sure the perforation of the first page is consistent with the “PAPER ORIENT” setting. Open the paper holder covers on the tractors. Set the leading end of the paper on the tractors and have 4 or 5 of the tractor pins engage with the holes of the paper. Close the paper holder covers.

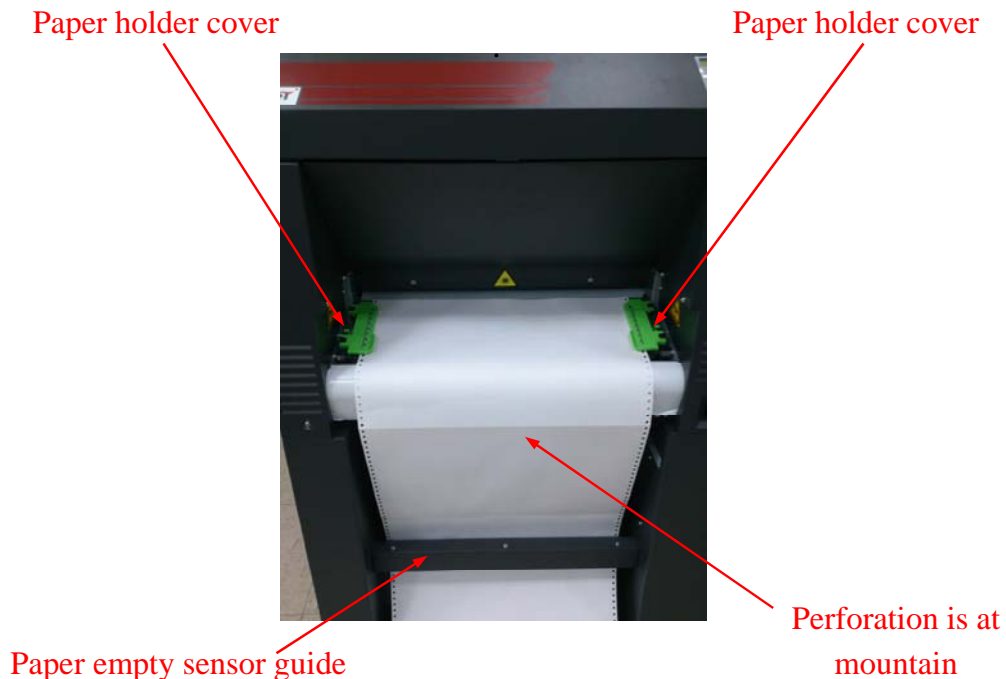


Fig. 3-6

【Note】 To prevent from causing paper jam, unlock the lock lever to move the right paper holder to a position where the tension of the paper is not too tight or too loose. When the proper position is determined, lock the lock lever.

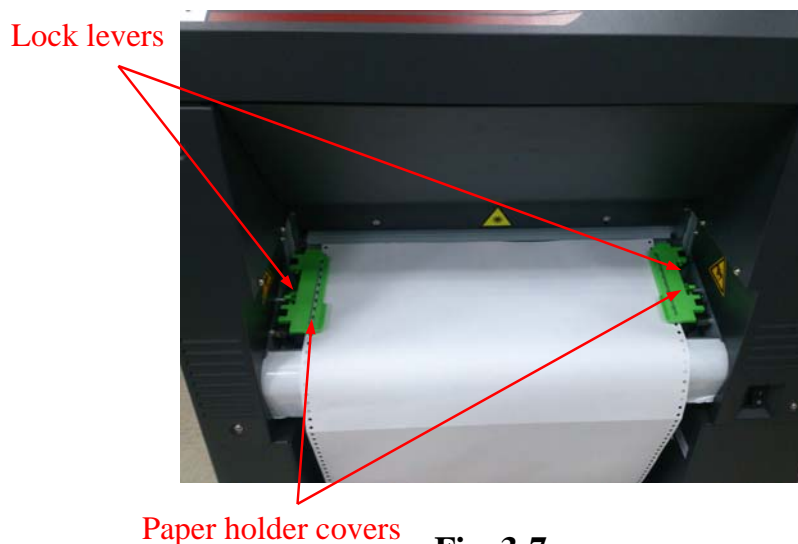


Fig. 3-7

(2) Paper Removal

- (a) Press the "ON Line" key on the operation panel to set the printer in the off-line state. The green light of the status indicator "READY" is out. Press the " Form Feed " key to move the paper completely out to paper exit. Separate the paper from paper exit.

- (b) Press the "ON Line" key again to set the printer in the "READY" state.

Chapter 4

Maintenance

4.1 Periodic Maintenance by Operators

(Count by 8.5" size, B/W 4%)

Item	Time-Clean (in pages)	Tool
Tractor unit	50K	Brush Vacuum cleaner
Transport unit	50K	Vacuum cleaner Dry cloth with alcohol Scraper
Transport belt	50K	Dry cloth with alcohol
Main charger	50K	Brush Wire cleaner
Pre-charger	50K	Brush Wire cleaner
Transfer charger	50K	Brush
Fuser cover glass	150K	Dry cloth with alcohol Scraper Remark: clean when fusing is bad
Paper empty sensor area	200K	Brush Vacuum cleaner
OPC Drum shaft & flange	300K	Shaft: dry cloth Flange: dry cloth with alcohol

Item	Time-Replace (in pages)	Remark
Toner cartridge (850g)	24K	Replace when the "Toner Empty" indication appears.
Waste toner box	100K	Replace when the "Waste Toner Full" indication appears.
Main charger	300K	
Air filter	353K	
Carbon filter	353K	
Transfer charger	450K	
Pre-charger	550K	
OPC Drum 18"	600K	
O-ring (12.5 x 2.4 mm) (3pcs/set)	600K	For drum support roller
Cleaning Unit	1200K	

【Note】

1. Pack the consumables properly before storage.
2. Store the consumables in a cool dry dark place and protect them from being exposed to humidity, temperature extremes, or direct sunlight.
3. Do not store the consumables for more than six months.
4. Service engineers will do the periodic maintenance for other items.

4.2 Cleaning

(1) Tractor Unit

In order to clean the tractor unit, use a vacuum cleaner to clear the paper dust scattered around the tractor unit.

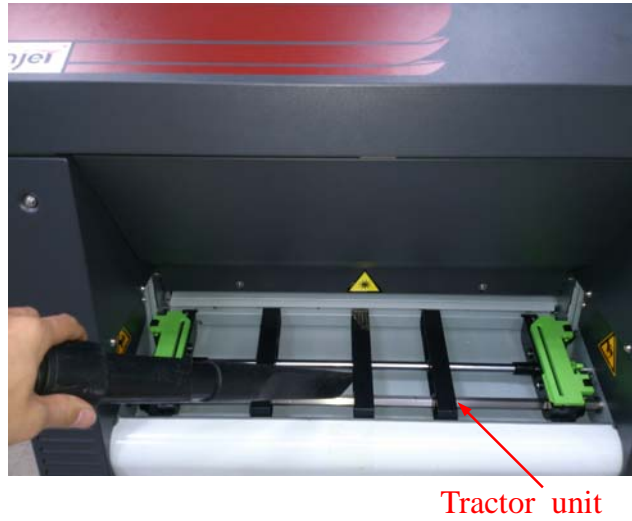


Fig. 4-1

(2) Transport Unit

- (a) Open the front cover (upper). Press down the opening lever to open the waste toner box unit.

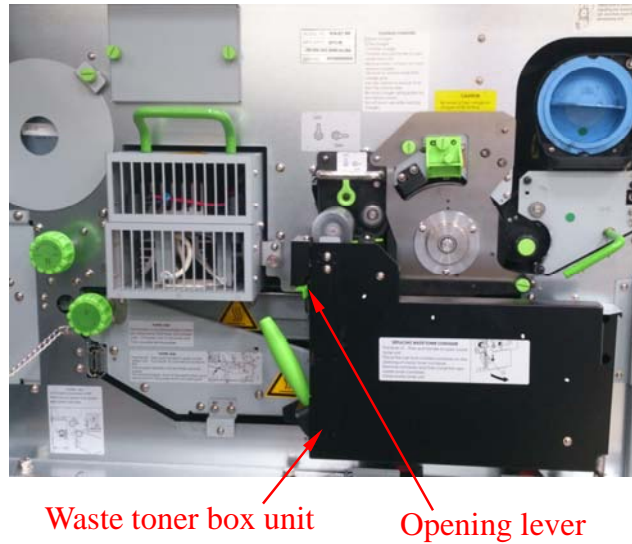


Fig. 4-2

- (b) Incline the green lever of the transport unit to the left to lower the transport surface, then pull out the transport unit.

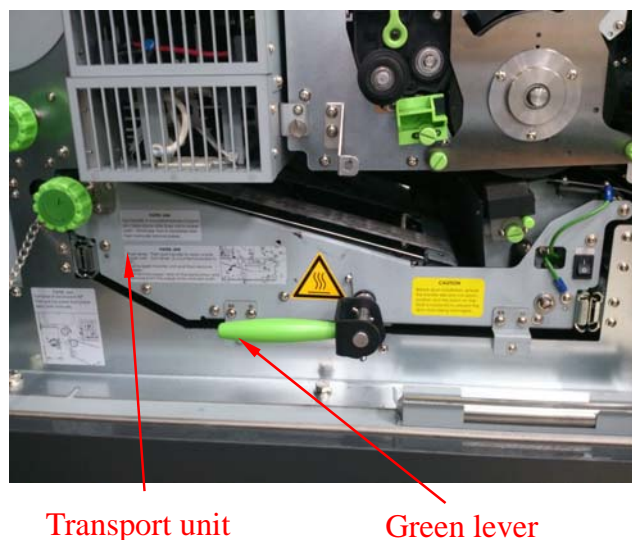


Fig. 4-3

(c) Use a vacuum cleaner to clear the scattered paper dust or toner particles.

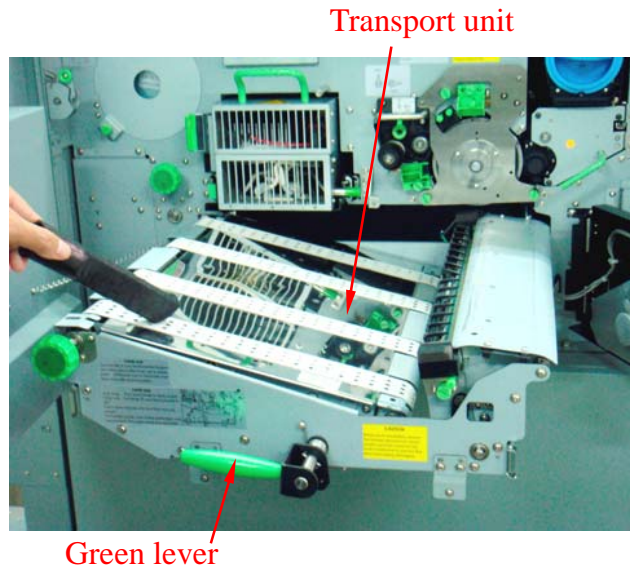


Fig. 4-4

(d) Use a piece of cloth with alcohol to remove the dirt on the transport surface and paper transport position sensor (PTPS). Rotate and clean the transport belts.

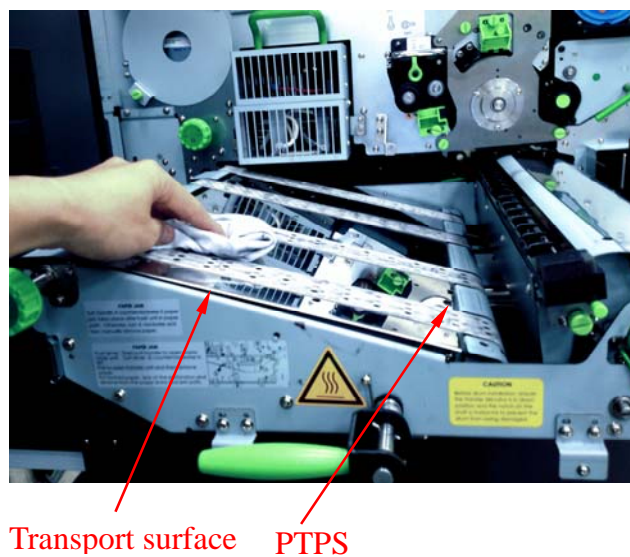


Fig. 4-5

- (e) Use a scraper to scrape off the dirt remained on the transport surface.

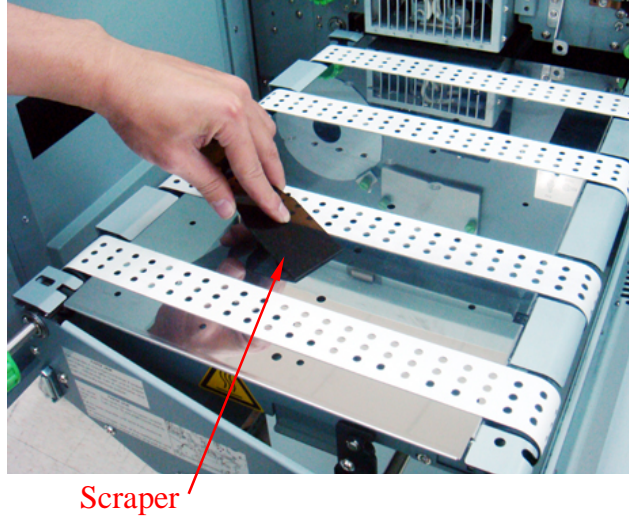


Fig. 4-6

- (f) After cleaning, insert the transport unit back as it was originally, and when the transport unit comes in contact with the inner end, raise the green lever to the right.

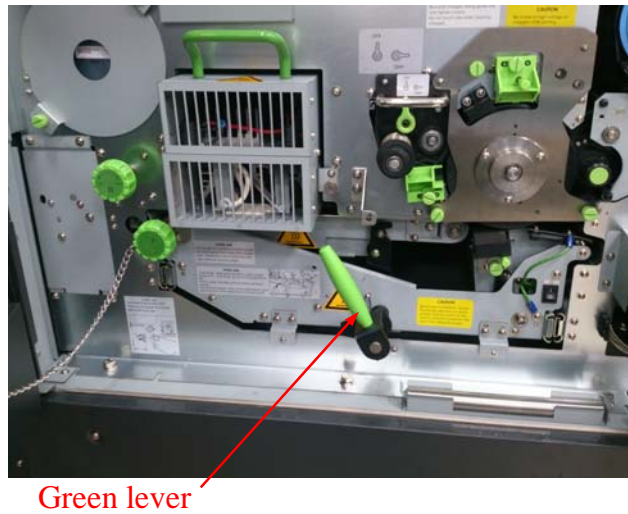


Fig. 4-7

- (g) Close the waste toner box unit.

(3) Main Charger

- (a) Open the front cover (upper). Pull out the cleaning rod and then insert it back several times for cleaning the wire.

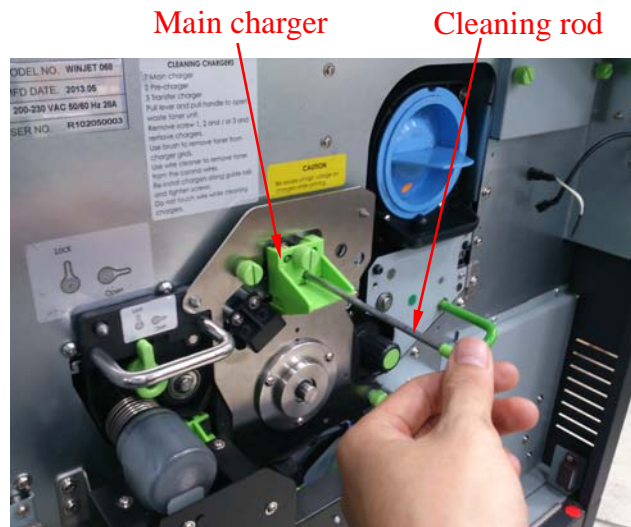


Fig. 4-8

- (b) Loosen the thumbscrew and pull the main charger out.

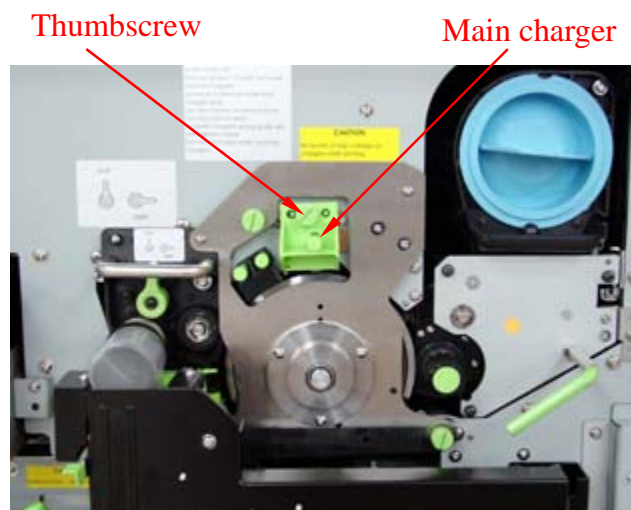


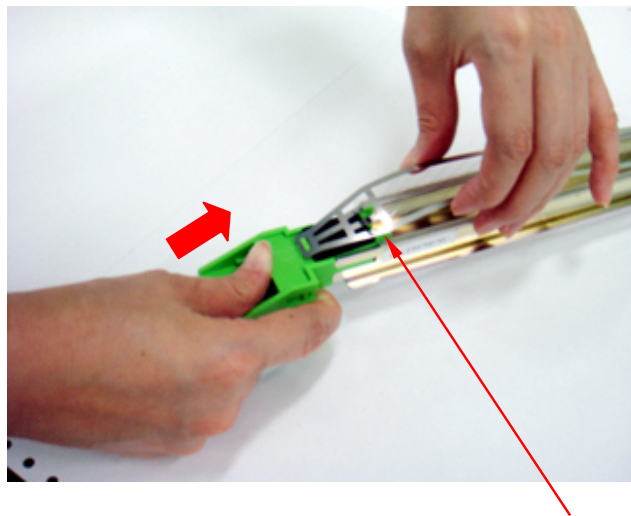
Fig. 4-9

(c) Use the brush to wipe off the dust on the main charger.



Fig. 4-10

(d) Push the plastic end of main charger to loosen the grid and detach the grid.



Grid

Fig. 4-11

- (e) Use the wire cleaner (applied with alcohol) to clean the wire of the main charger.

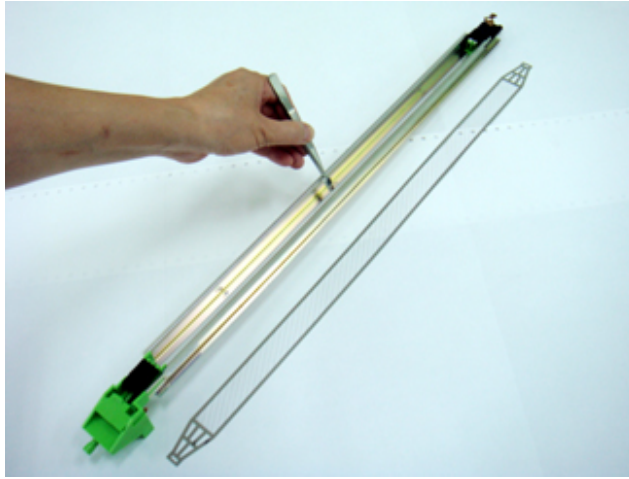


Fig. 4-12

- (f) After cleaning, insert the plastic pin into the rectangle hole of the grid.

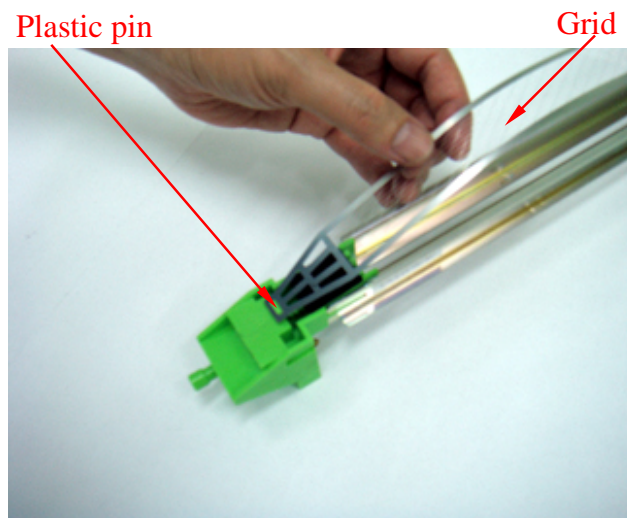


Fig. 4-13

- (g) While pushing the plastic end of main charger, insert the metal pin into the rectangle hole of the other end of the grid.

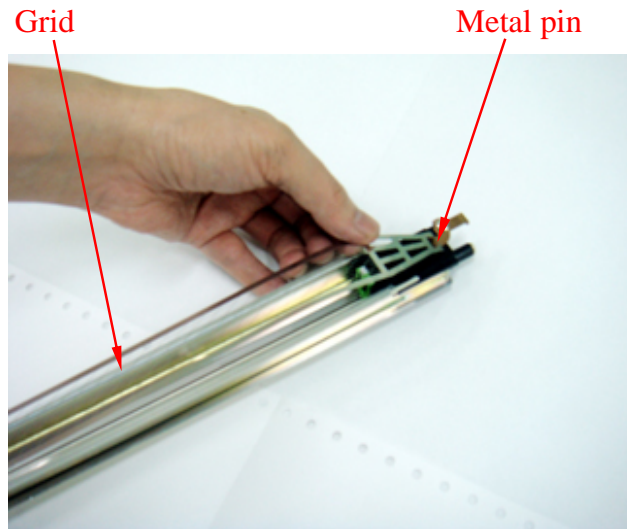


Fig. 4-14

- (h) After cleaning, insert the main charger to its original location and tighten the thumbscrew.

(4) Pre-Charger

- (a) Open the front cover (upper). Press down the opening lever to open the waste toner box unit.

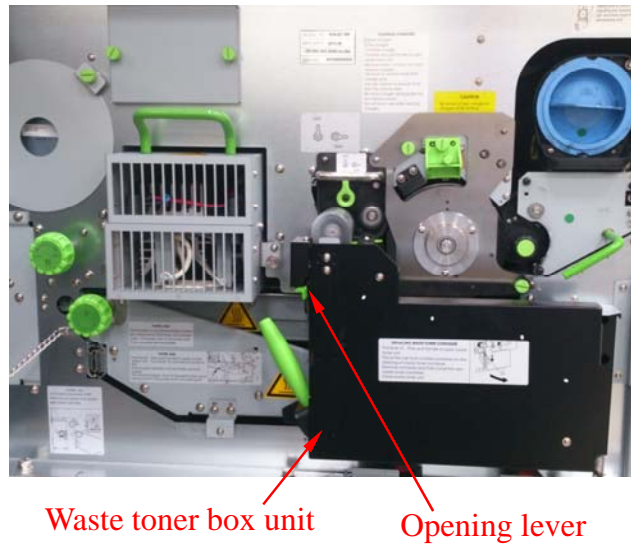


Fig. 4-15

- (b) Loosen the thumbscrew and pull out the pre-charger.

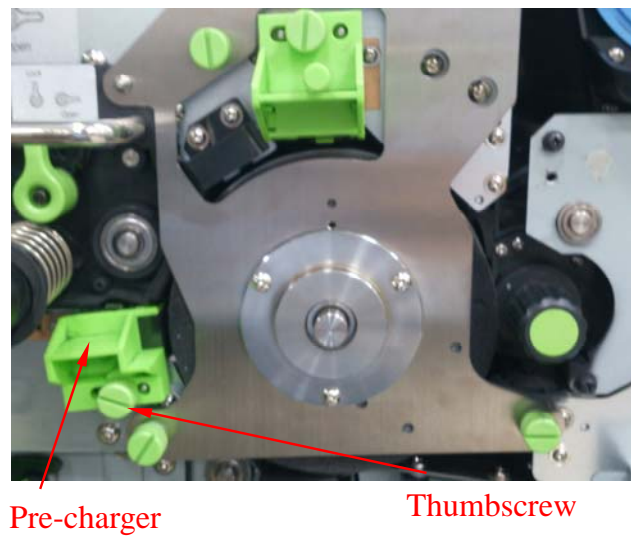


Fig. 4-16

- (c) Use the brush to wipe off the dust on the pre-charger.

- (d) Use the wire cleaner (applied with alcohol) to clean the wire of the pre-charger.

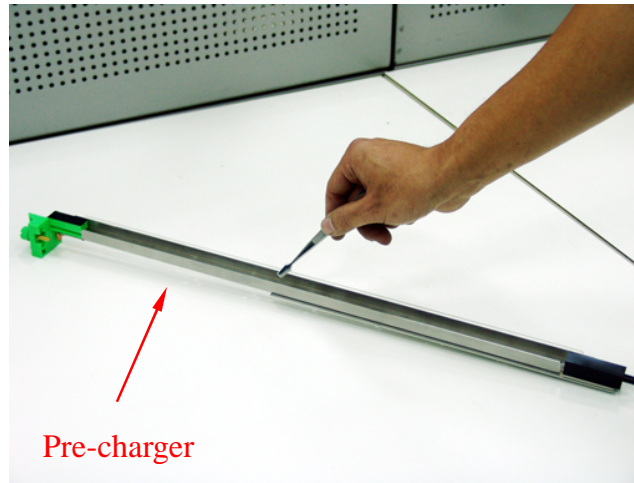


Fig. 4-17

- (e) After cleaning, insert the pre-charger to its original location and tighten the thumbscrew. Close the waste toner box unit.

(5) Transfer Charger

- (a) Open the front cover (upper). Press down the opening lever to open the waste toner box unit.

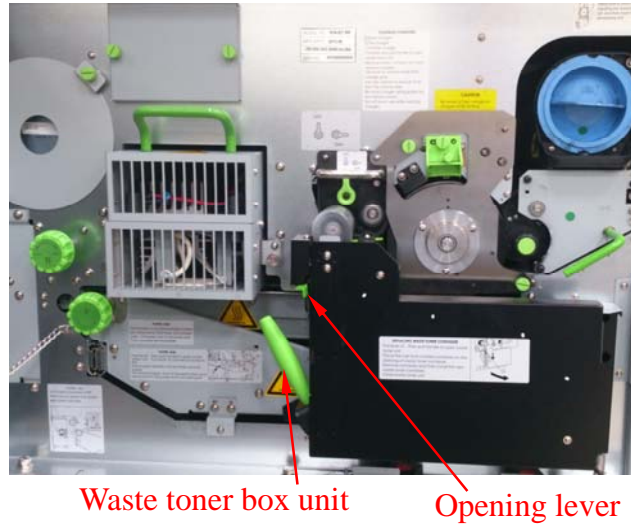


Fig. 4-18

- (b) Pull out the cleaning rod and then insert it back several times for cleaning the wire.

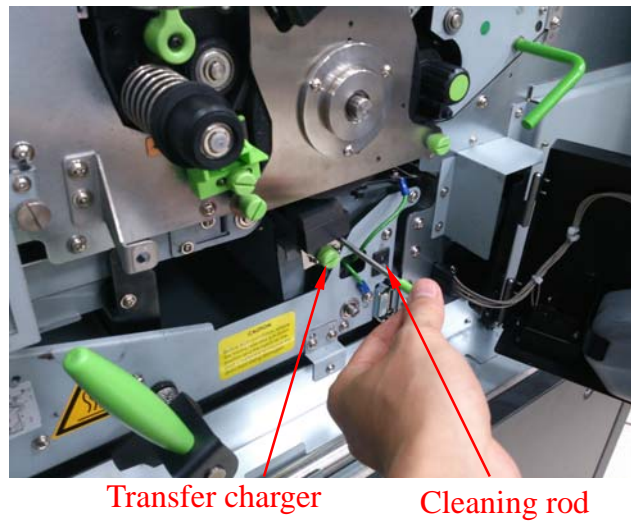


Fig. 4-19

- (c) Confirm that the transfer charger is at the “down” position. If the transfer charger is not at the “down” position, use a slotted screwdriver to turn the transfer elevator drive shaft counterclockwise to lower the transfer charger to the “down” position.

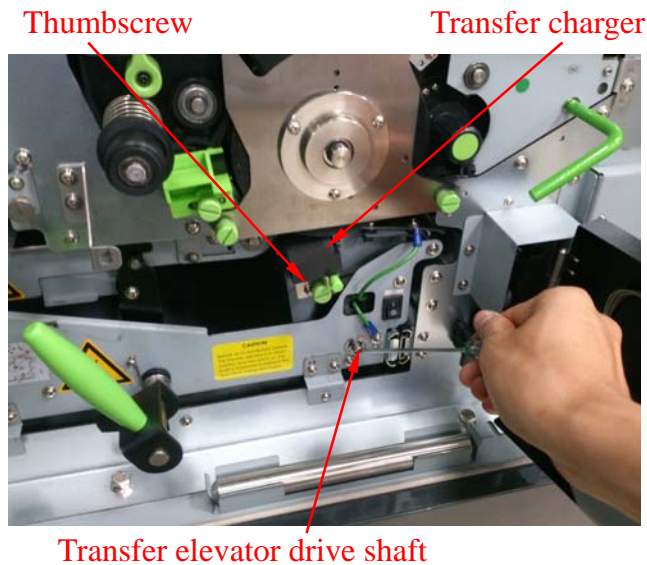


Fig. 4-20

- (d) Incline the green lever of the transport unit to the left to lower the transport surface, then pull out the transport unit.

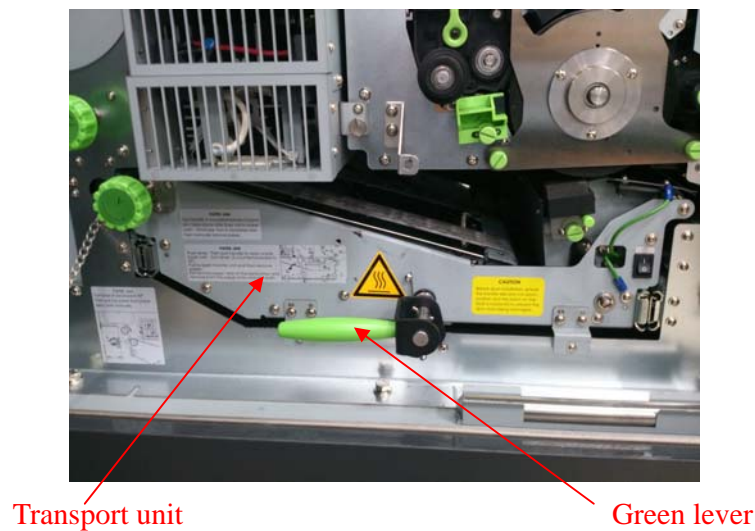


Fig. 4-21

- (e) Use the brush to wipe off the dust on the transfer charger.

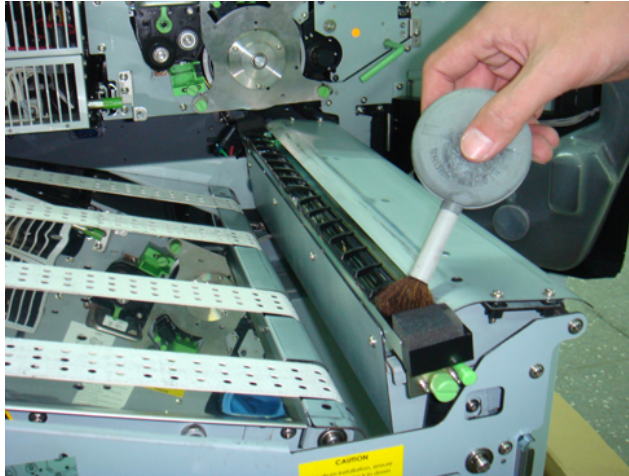


Fig. 4-22

- (f) After cleaning, insert the transport unit back as it was originally, and when the transport unit comes in contact with the inner end, raise the green lever to the right.



Fig. 4-23

Green lever

- (g) Close the waste toner box unit.

(6) Fuser Cover Glass



CAUTION

- a) Do not handle the fuser unit (Pre-heat lamp & Xenon lamp) until it has fully cooled due to the unit becomes very hot after operation. The fuser unit is not available to be pulled out when it's not fully cooled.
- b) Do not use your hands touch the fuser cover glass directly, or make scratches on the glass.

1. Open the front cover (upper).
2. Remove screws 1 and 2. pull out the fuser unit carefully until the second handing bar is showed.

Fuser unit

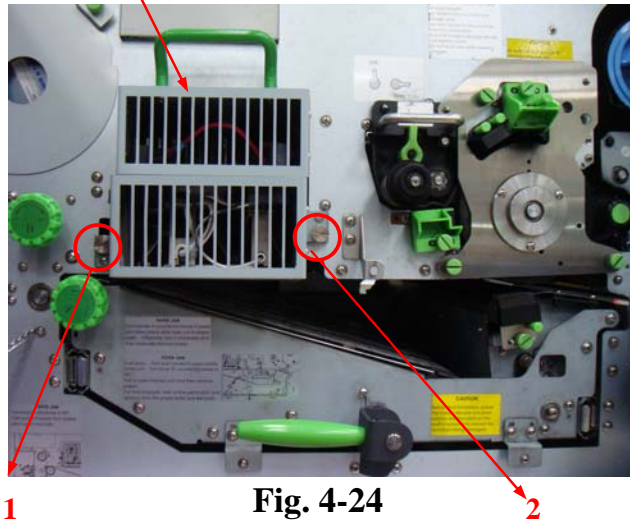


Fig. 4-24



Fig. 4-25

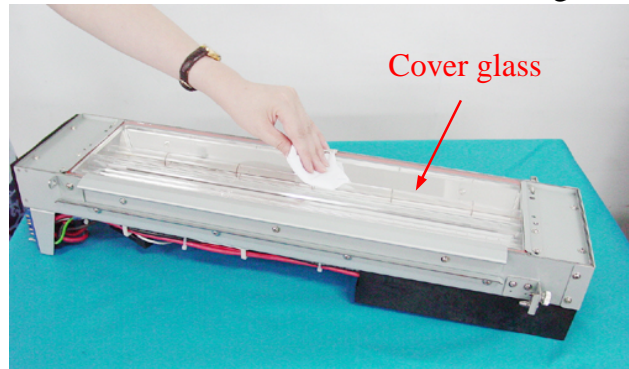
3. Use both hands to hold the handling bars, and detach the fuser unit from the main body.



Handling bars

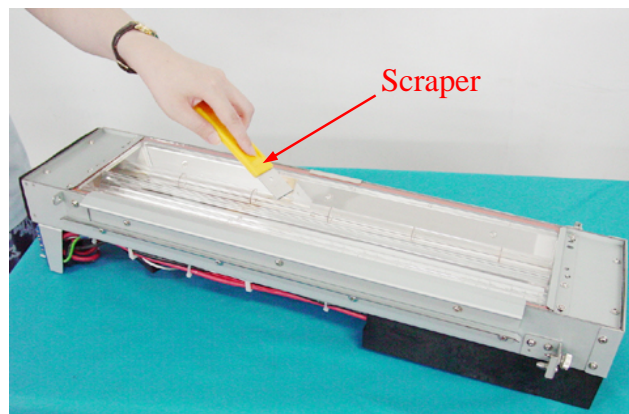
Fig. 4-26

4. Use dry cloth with alcohol to clean the fuser cover glass.

**Fig. 4-27**

5. Use the scraper to scrape off the dirt remained on the fuser cover glass surface.

6. After cleaning, install the fuser unit by reversing the steps.

**Fig. 4-28**

(7) Paper Empty Sensor Area

Use a brush to clean the paper empty sensor area.



Fig. 4-29



Fig. 4-30

(8) OPC Drum Shaft & Flange

- (a) Open the front cover (upper). Then turn the lever of the developing unit by 120° to the right to detach the developing unit.

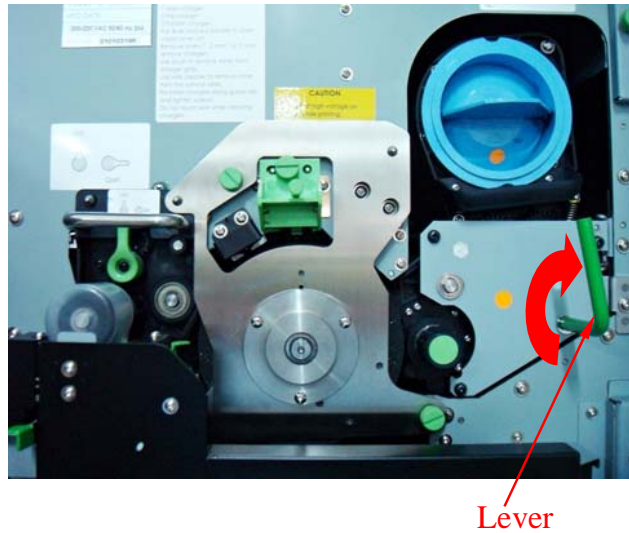


Fig. 4-31

- (b) Hold the lever with one hand and pull out the unit more. Hold the handling bar with another hand.

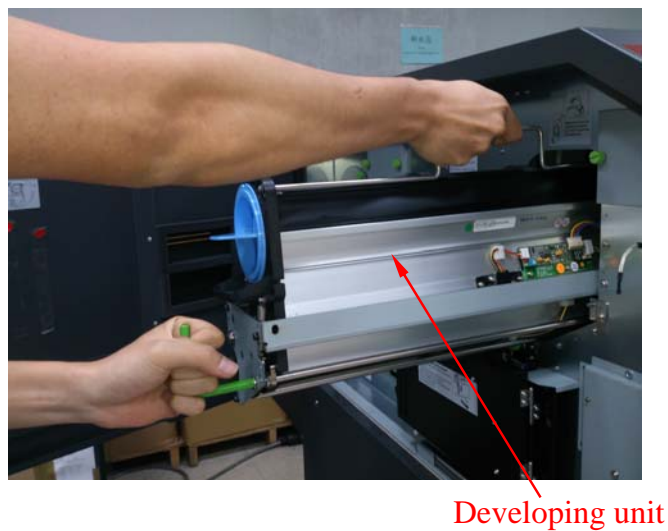


Fig. 4-32

- (c) Take out the OPC drum (see “**4.3 Replacement: (6) OPC Drum**”).
- (d) Clean the drum shaft with dry cloth.

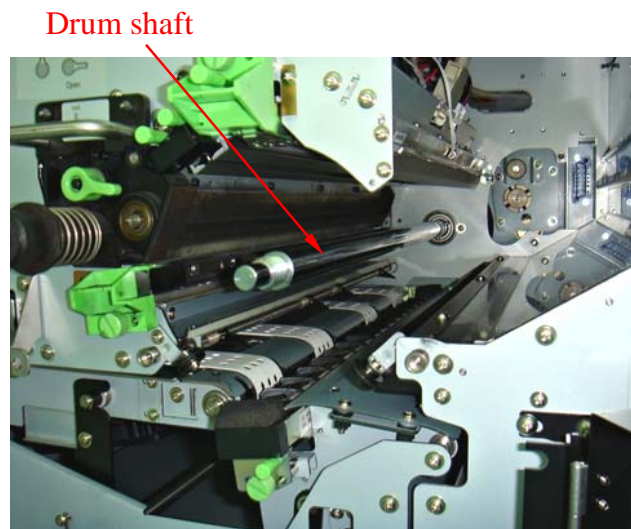


Fig. 4-33

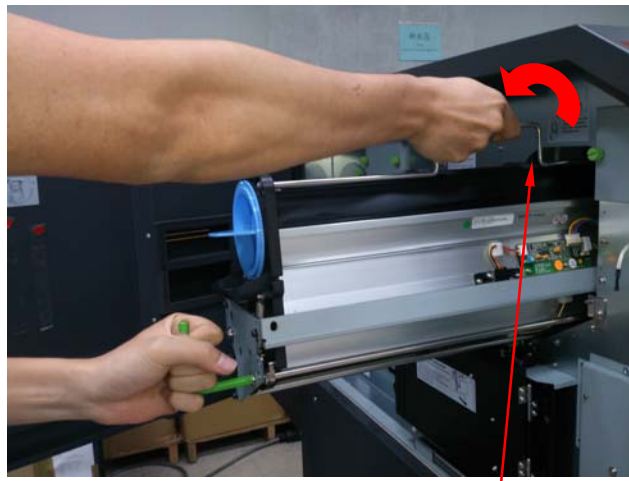
- (e) Use dry cloth with alcohol to clean the drum flanges on both sides.



Fig. 4-34

- (f) Reinstall the OPC drum (see “**4.3 Replacement: (6) OPC Drum**”).

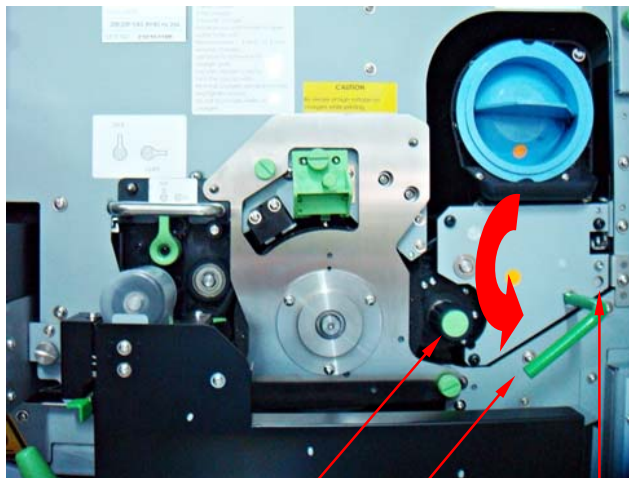
- (g) Make sure to place the handling bar towards left, and then insert the developing unit.



Handling bar

Fig. 4-35

- (h) Align the pinhole on the unit with the positioning pin on the main body. After the developing unit has been inserted all the way in, turn the lever downwards by 120° to the position shown in figure to ensure the developing unit has been set firmly. If the lever could not be turned downwards, turn the developing roller knob and engage it with the gear at the rear and then push in the developing unit firmly.

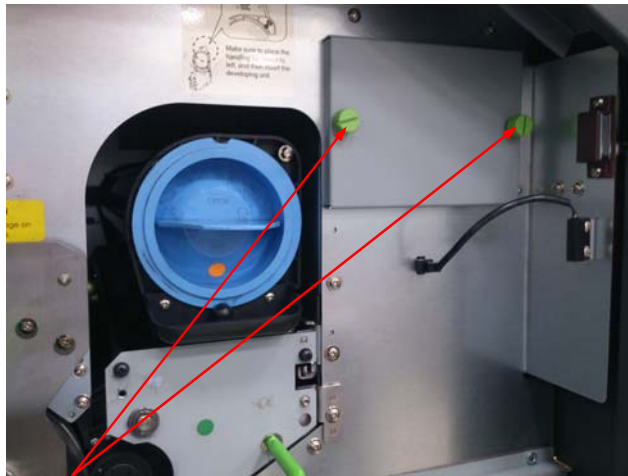


Developing roller knob Lever Positioning pin

Fig. 4-36

(9) Carbon Filter Area

- (a) Open the front cover (upper). Loosen the thumbscrews, and then remove the carbon filter cover.



Thumbscrews

Fig. 4-37

- (b) Pull out the carbon filter.



Carbon filter

Fig. 4-38

(c) Use a vacuum cleaner to clean the carbon filter area.



Fig. 4-39

4.3 Replacement

(1) Toner Cartridge

- (a) Open the front cover (upper). Rotate the toner cartridge counterclockwise by 180° to align the slit of the toner cartridge with the pin of the developing unit. Then pull out the toner cartridge and properly dispose the removed cartridge.

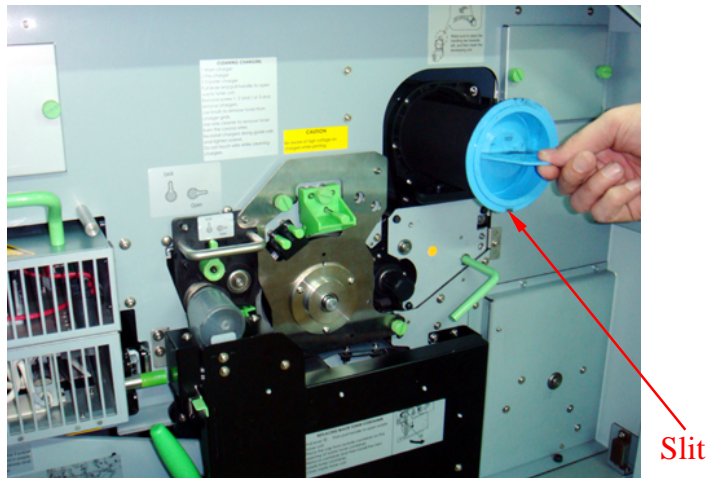


Fig. 4-40

- (b) Take out a new toner cartridge. With the cover tape facing up, hold the toner cartridge and shake it 4 or 5 times in the direction of the arrows shown in the figure.



Fig. 4-41

- (c) With the cover tape facing up, insert the cartridge entirely into the toner hopper and slowly remove the cover tape from the arrow labeled on the tape.

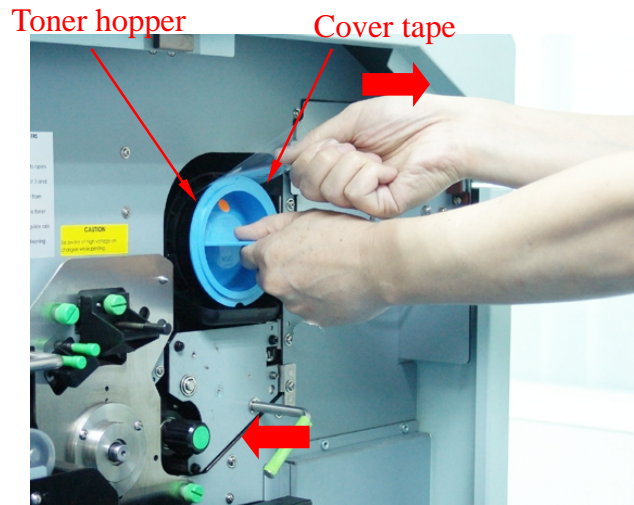


Fig. 4-42

- (d) After inserting the toner cartridge into the toner hopper, turn the toner cartridge clockwise by 180° to move the slit of the toner cartridge upward from the position of pin.



Fig. 4-43

(2) Waste Toner Box

- (a) Open the front cover (upper). Press down the opening lever to open the waste toner box unit.

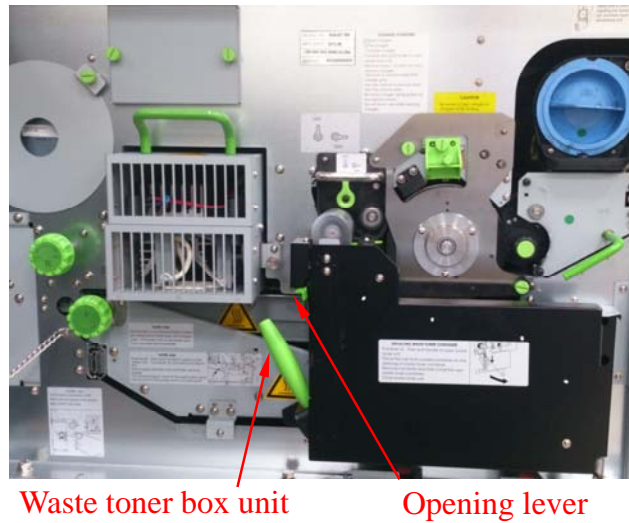


Fig. 4-44

- (b) Detach the cap from the waste toner box. Then use the cap to seal the waste toner box. Remove the waste toner box.

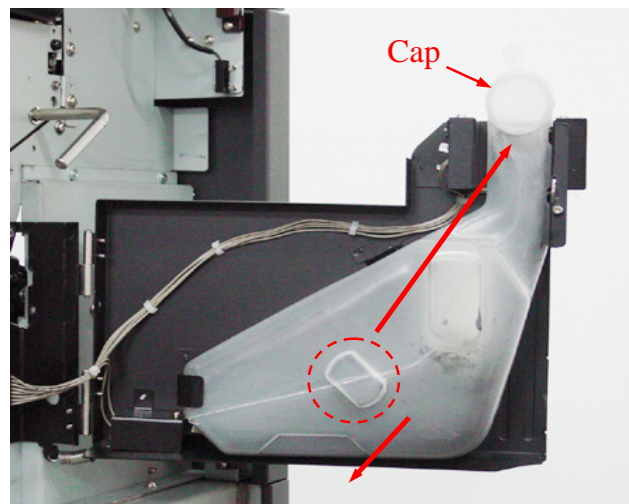


Fig. 4-45

- (c) Install a new waste toner box then close the waste toner box unit.

(3) Chargers



WARNING

Be very careful when handling these chargers since high voltage is applied during printing process, and never touch the charger power supply.

Main charger, pre-charger, and transfer charger can be removed by loosening thumbscrews and pulled out along the guide rail.

When replacing the main charger, loosen the thumbscrew and pull the main charger out then replace with a new one.

Before replacing the pre-charger and transfer charger, open the waste toner box unit. When replacing the pre-charger, loosen the thumbscrew and pull the pre-charger out then replace with a new one.

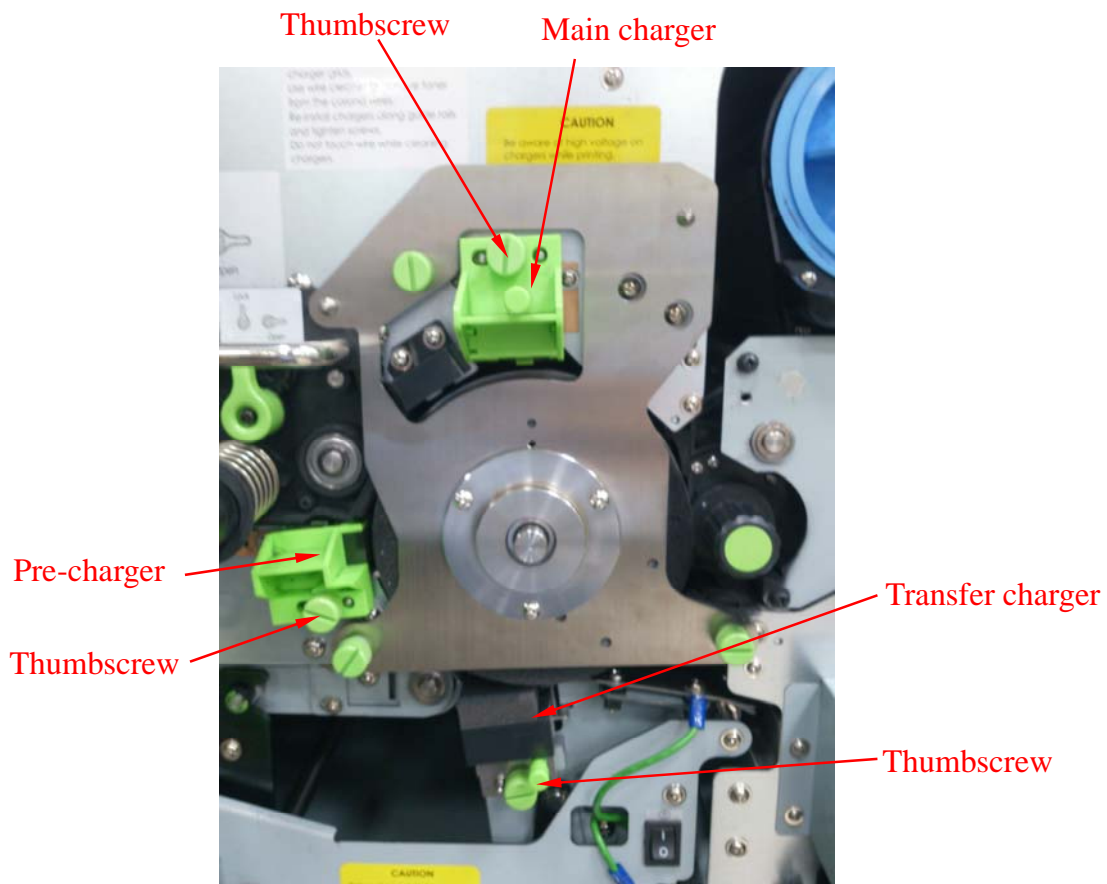
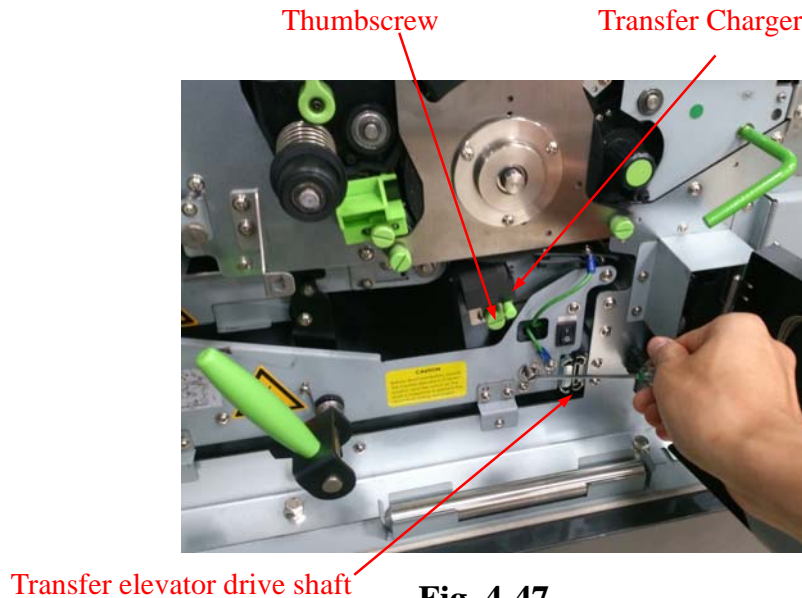
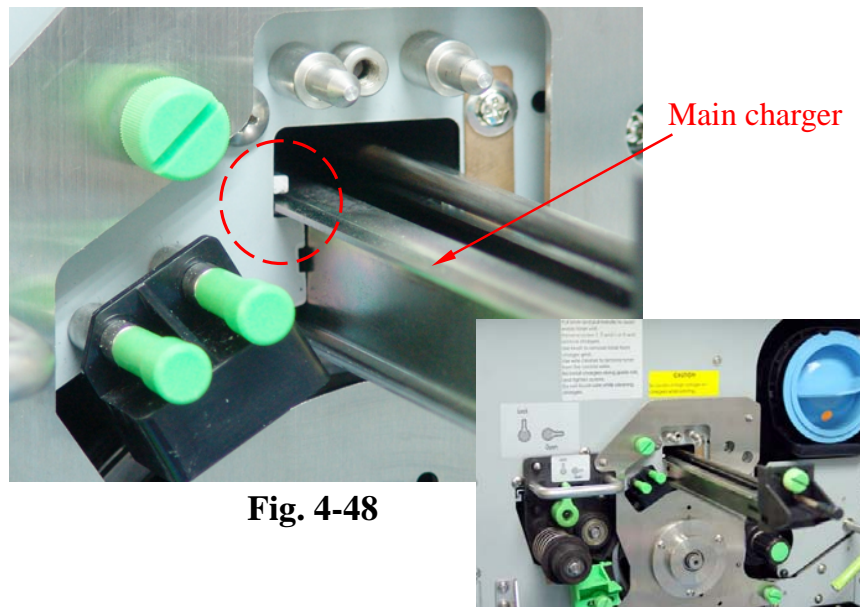


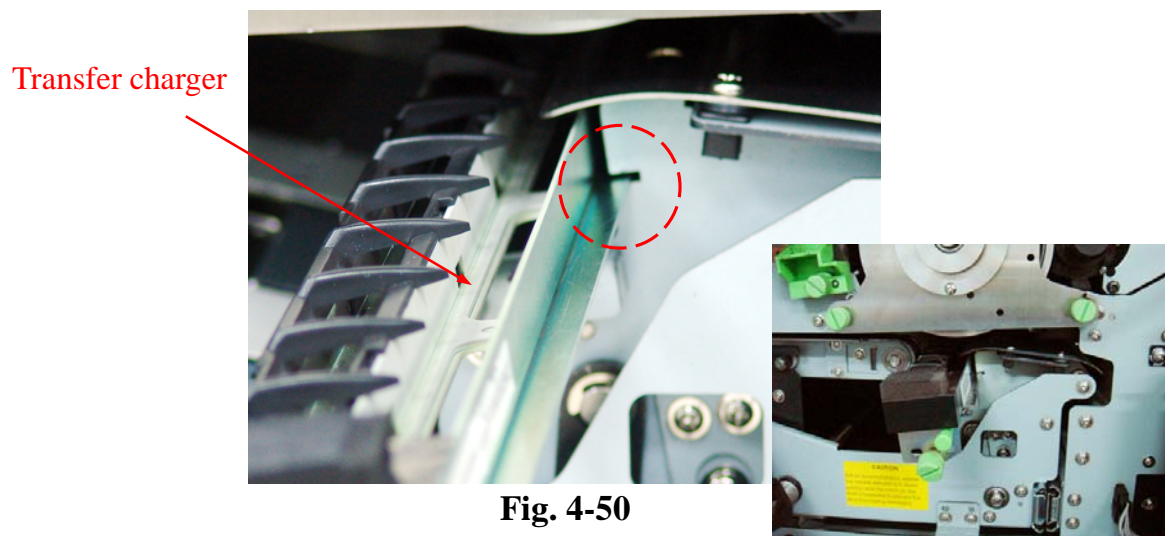
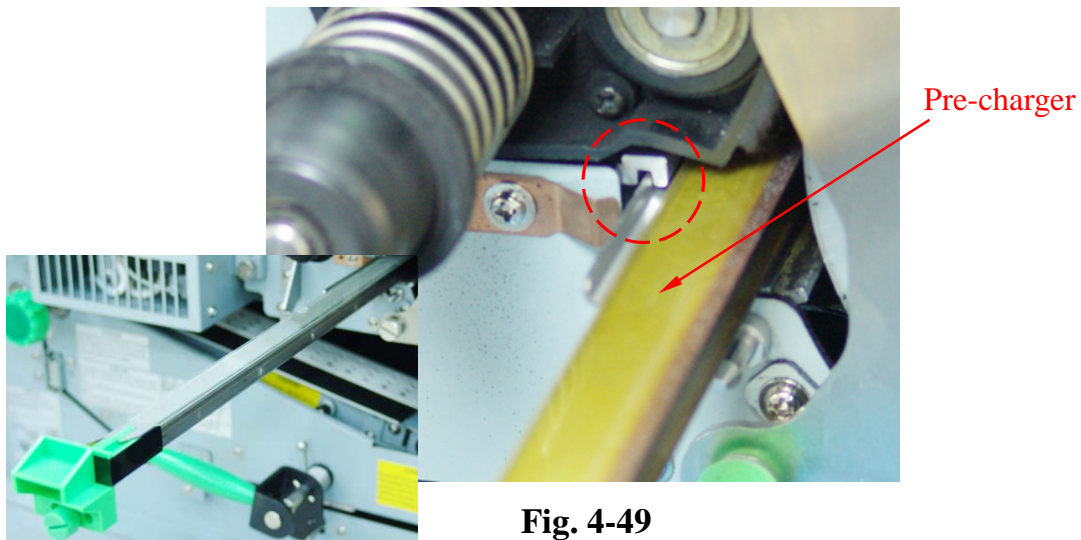
Fig. 4-46

The transfer charger must be at the “down” position for removal. If it is not at the “down” position, use a slotted screwdriver to turn the transfer elevator drive shaft counterclockwise to set the transfer charger at the down position. Loosen the thumbscrew and pull the transfer charger out then replace with a new one.



Insert new chargers correctly as the following figures show.





Tighten the thumbscrews, and then close the waste toner box unit.

(4) Air Filter

- (a) Open the front cover (upper). Loosen the thumbscrews, and then remove the air filter cover.

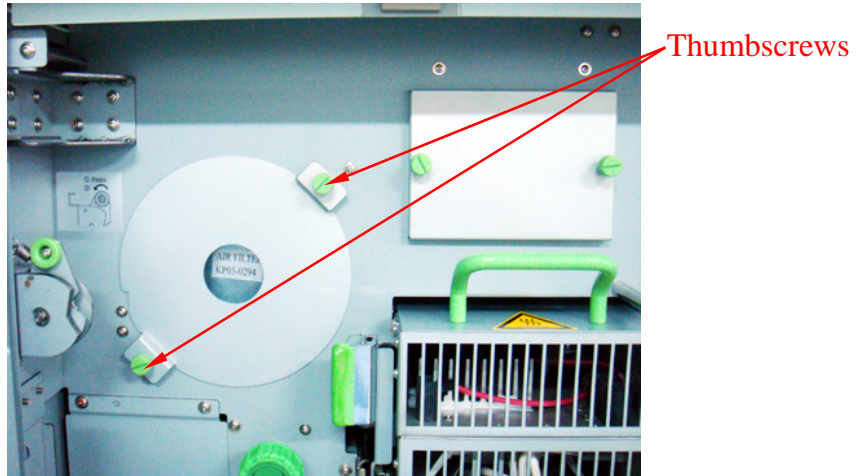


Fig. 4-51

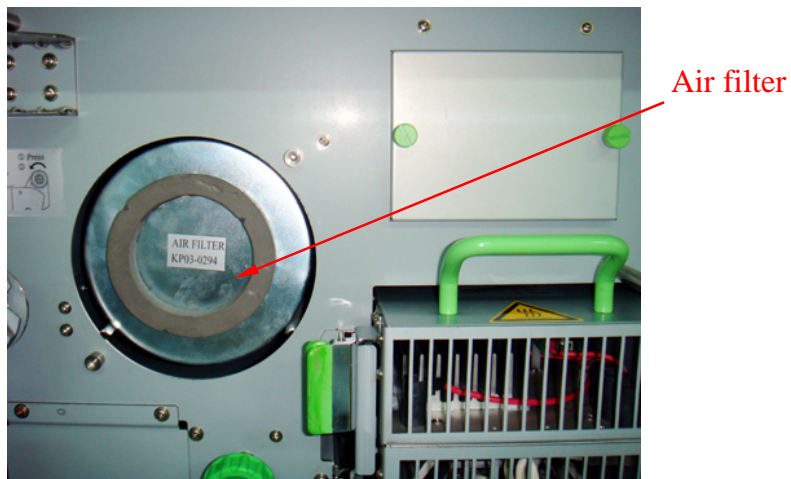


Fig. 4-52

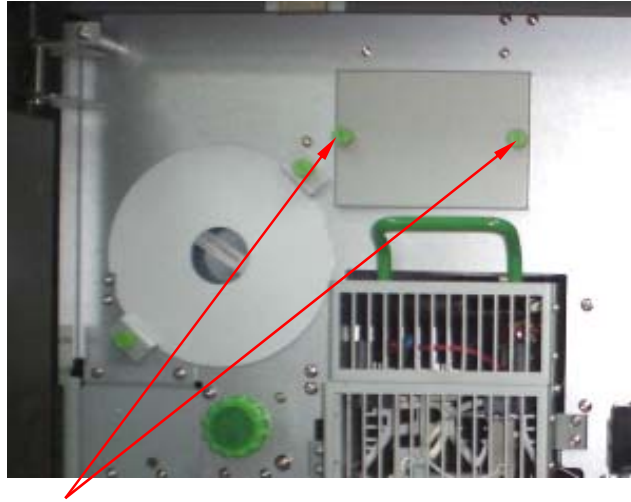
- (b) Pull out the air filter and then insert a new one. Put the cover back and tighten the thumbscrews.



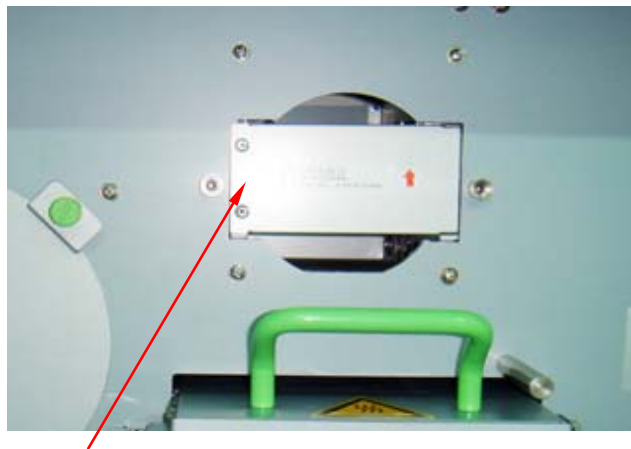
Fig. 4-53

(5) Carbon Filter

- (a) Open the front cover (upper). Loosen the thumbscrews, and then remove the carbon filter cover.



Thumbscrews **Fig. 4-54**



Carbon filter **Fig. 4-55**

- (b) Pull out the carbon filter and then insert a new one. Put the cover back and tighten the thumbscrews.

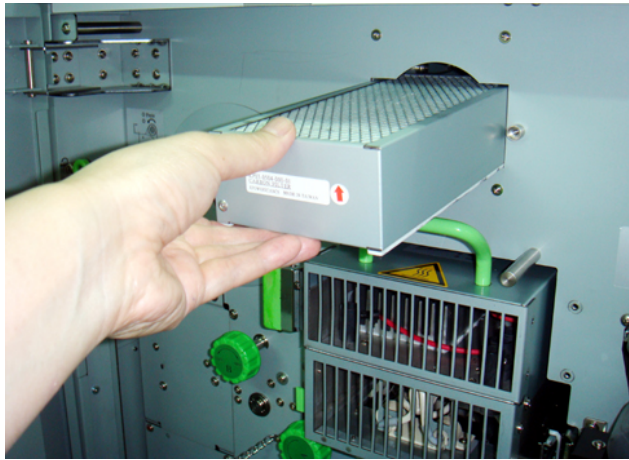


Fig. 4-56

- (c) Loosen the thumbscrews, and then remove the carbon filter cover.

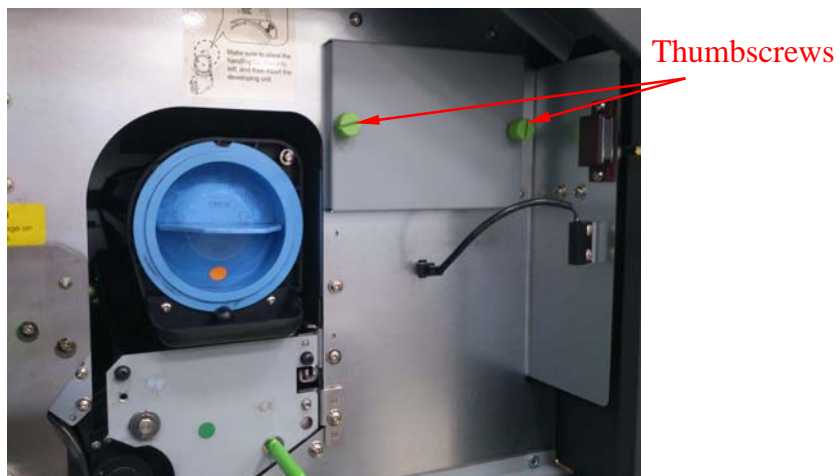


Fig. 4-57



Fig. 4-58

- (d) Pull out the carbon filter and then insert a new one. Put the cover back and tighten the thumbscrews.



Fig. 4-59

(6) OPC Drum



CAUTION

Be careful of the following points in installing or removing the OPC drum.

Step 1. Make sure the green lock lever of the cleaning unit is turned to the “OPEN” position (horizontally to 3-o’clock direction) before removing or installing OPC drum.

Step 2. For OPC drum rotating smoothly, make sure to lubricate the OPC drum after installing a new OPC drum (refer to step (k) below).

Step 3. Never touch the drum surface.

Step 4. Since the life of the drum will be shortened by exposure to light, be sure to store the drum in the box before and after replacement, and mount the drum as quickly as possible.

Step 5. To mount the drum, push the drum properly into the inner end, and then turn the drum to align the slits of the drum with the pins of the drum shaft until a click sound is heard.

Step 6. In order to prevent damaging the drum, confirm that the transfer elevator is at the “down” position and that the notch part of the shaft is horizontal.

(a) Open the front cover (upper). Then turn the lever of the developing unit by 120° to the right to detach the developing unit.



Fig. 4-60

- (b) Press down the opening lever to open the waste toner box unit.

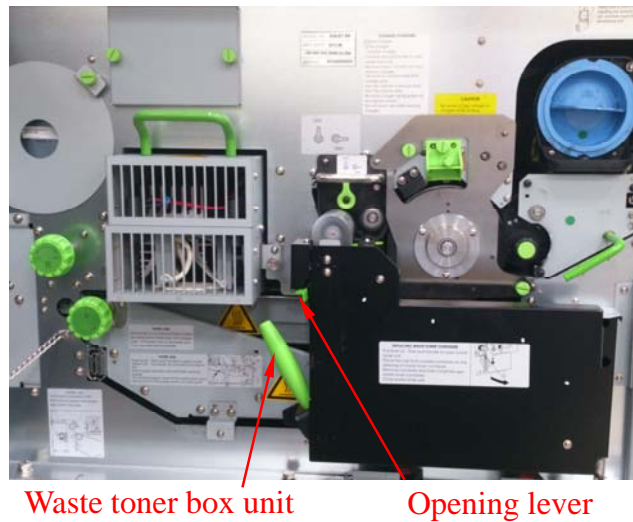


Fig. 4-61

- (c) Confirm that the transfer charger is at the “down” position. If the transfer charger is not at the “down” position, use a slotted screwdriver to turn the transfer elevator drive shaft counterclockwise to lower the transfer charger to the “down” position.

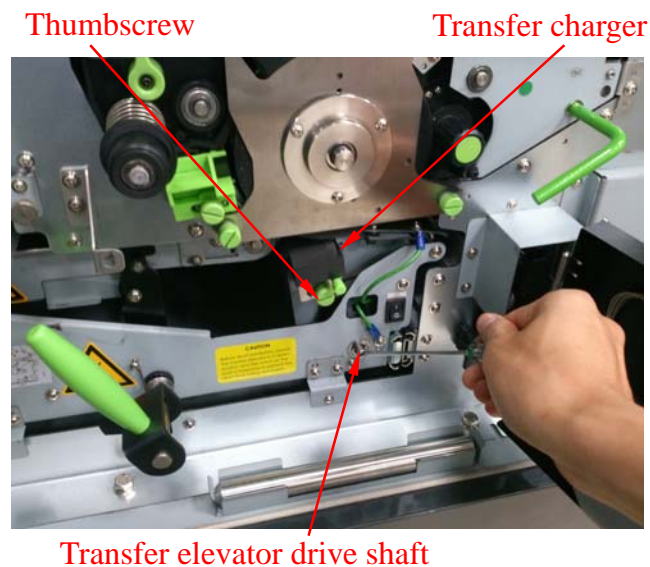


Fig. 4-62

- (d) Make sure the green lock lever of the cleaning unit is turned to the “OPEN” position (horizontally to 3-o’clock direction). Loosen the 3 thumbscrews and remove the drum plate.

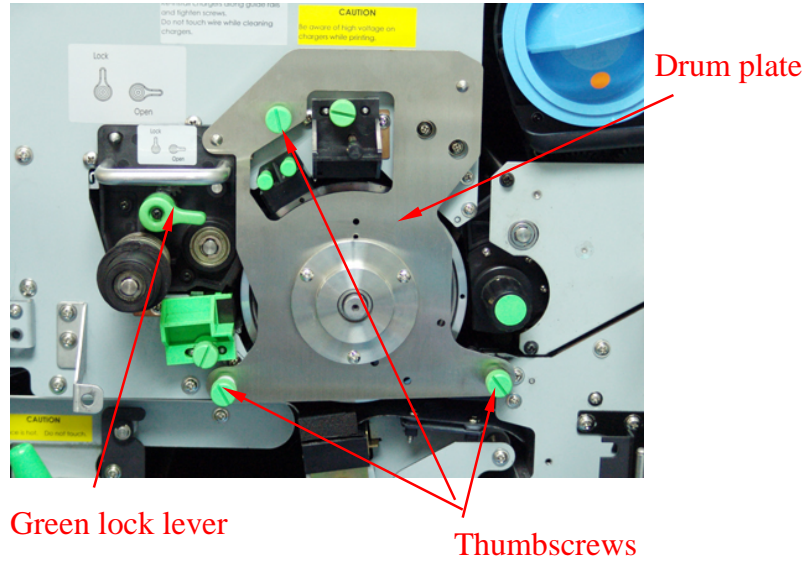


Fig. 4-63

- (e) Turn the nut and then remove the nut from the drum shaft.

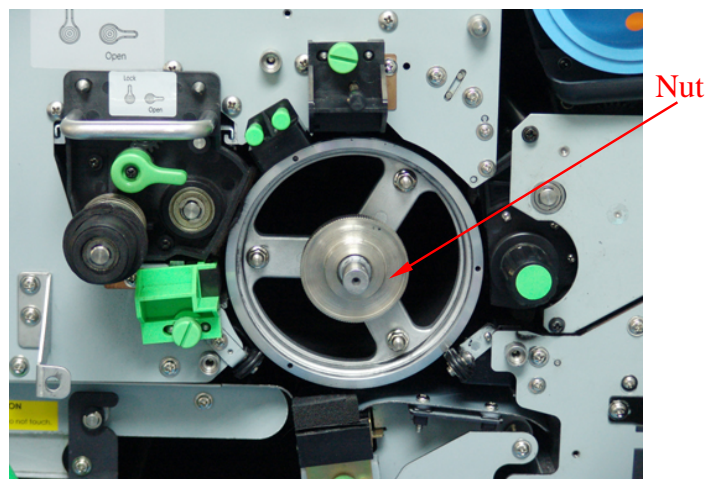


Fig. 4-64

(f) Attach the drum setting rod to the drum shaft.

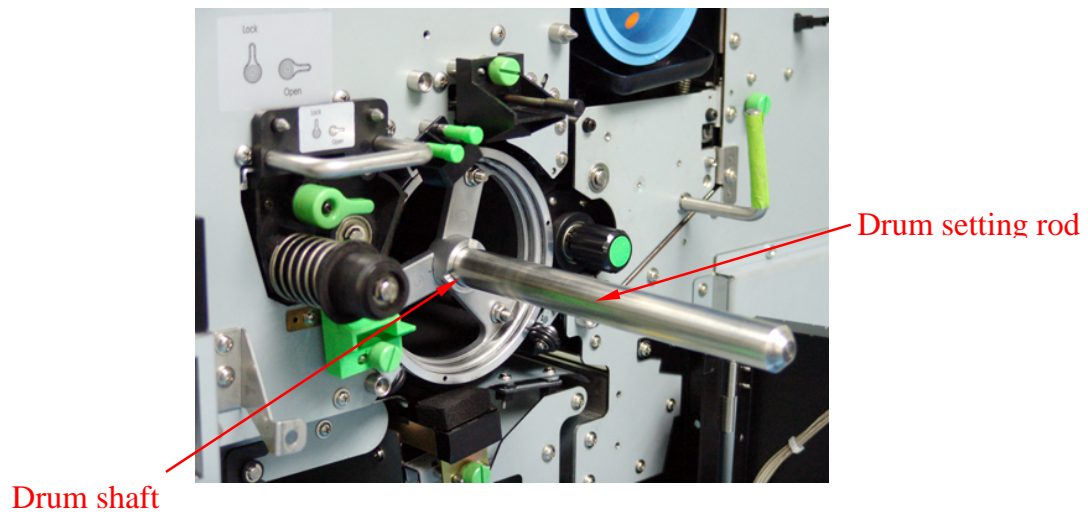


Fig. 4-65

(g) Pull out the drum. Make sure to use both hands to hold both sides of the drum when taking out the drum. Do not touch the drum surface by hands.

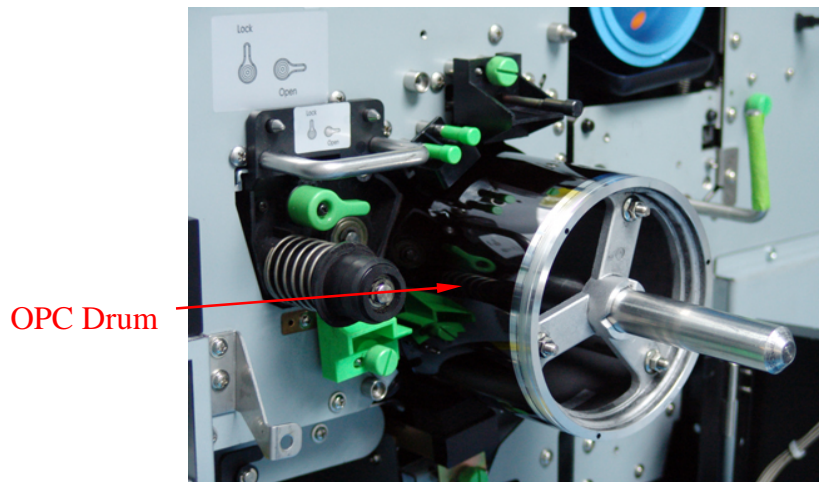


Fig. 4-66

- (h) Remove the O-rings (12.5x2.4 mm) attached on the drum support rollers, then replace with new O-rings.

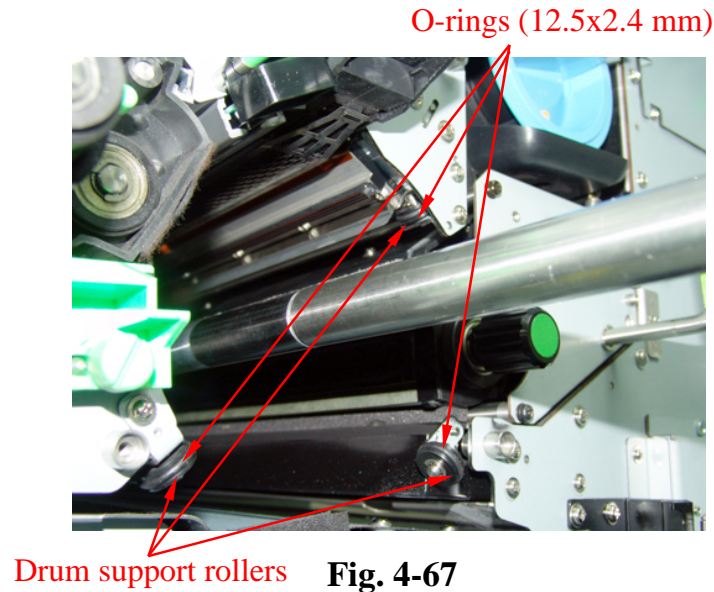


Fig. 4-67

- (i) Insert a new drum through the shaft and when the drum contacts the inner end, turn the drum to fit the drum securely. Remove the drum setting rod and securely tighten the nut. Put the drum plate back and tighten the 3 thumbscrews.
- (j) Turn the lever of the developing unit by 120° to the left to set the developing unit. Make sure the green lever of the transport unit is set to upward position. Then close the waste toner box unit and close the front cover (upper).

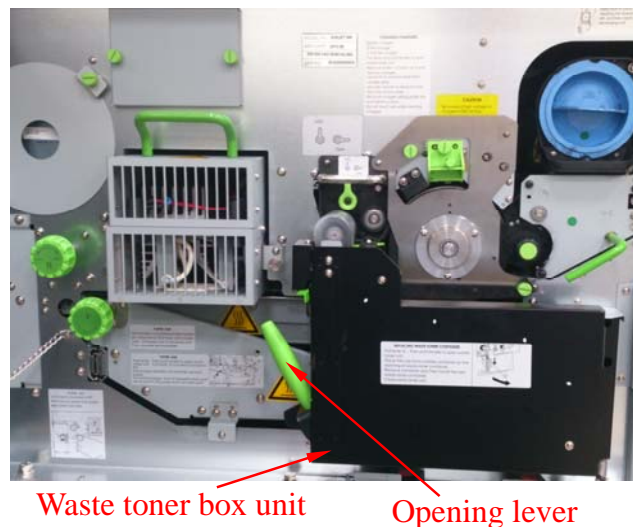


Fig. 4-68

- (k) Make sure paper is set correctly. Turn on the power, and the panel screen displays “WARM UP” message. The process of lubricating OPC drum is working for a while. Then the message of error code 24 is displayed.
- (l) Open the front cover (upper). Turn the green lock lever of cleaning unit to the “LOCK” position (vertically to 12-o’clock direction). Close the front cover (upper).



Green lock lever

Fig. 4-69

- (m) Press “ON Line” key on the operation panel to clear the error message. The process of OPC drum initialization is working for a while. Then the printer is in “READY” status.

(7) Cleaning Unit



CAUTION

- 1) When replace a cleaning unit, turn the green lock lever of the cleaning unit to the "OPEN" position (horizontally to 3-o'clock direction) before removing or inserting the unit.
- 2) Do not move the cleaning unit upside down since the toner may spill.
- 3) Please lubricate the blade of the new cleaning unit with Talc powder before installation.

- (a) Open the front cover (upper). Press down the opening lever to open the waste toner box unit.



Waste toner box unit

Opening lever

Fig. 4-70

- (b) Make sure the green lock lever of the cleaning unit is turned to the "OPEN" position (horizontally to 3-o'clock direction). Loosen the 3 thumbscrews and then remove the drum plate. Remove the cleaning unit by holding the handle and pulling the unit out.



Cleaning unit

Fig. 4-71

- (c) After insert the new cleaning unit, put the drum plate back and tighten the 3 thumbscrews. Close the waste toner box unit and close the front cover (upper).
- (d) Make sure paper is set correctly. Turn on the power, and the panel screen displays "WARM UP" message. The process of lubricating OPC drum is working for a while. Then the message of error code 24 is displayed.
- (e) Open the front cover (upper). Then turn the green lock lever of the cleaning unit to the "LOCK" position (vertically to 12-o'clock direction), then close the front cover (upper).
- (f) Press "ON Line" key on the operation panel to clear the error message. The process of OPC drum initialization is working for a while. Then the printer is in "READY" status.

Chapter 5

Troubleshooting

5.1 Paper Jam

(a) Open the front cover (upper).

(b) Press down the opening lever to open the waste toner box unit.

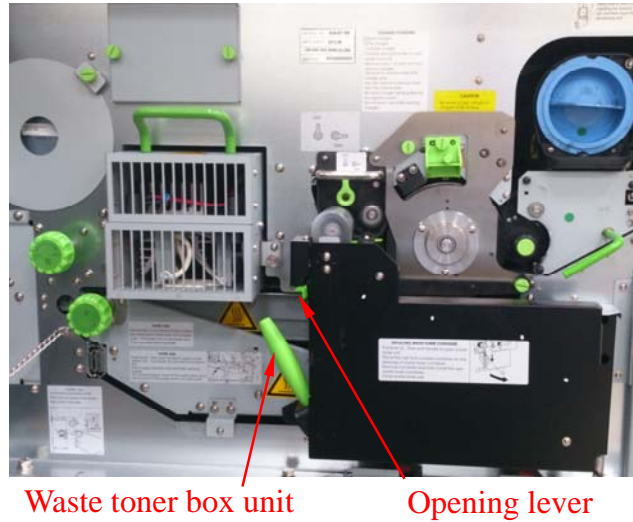


Fig. 5-1

(c) Turn the green lever to the left to lower the transport unit.

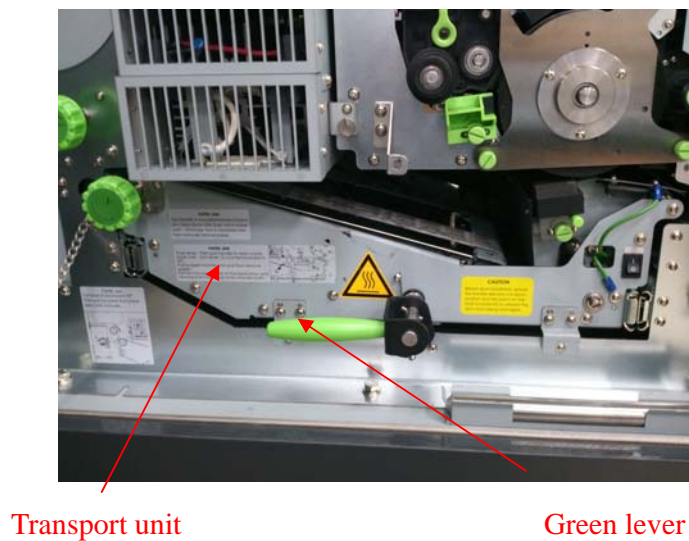


Fig. 5-2

(d) Turn knob B towards "FREE" direction fully.

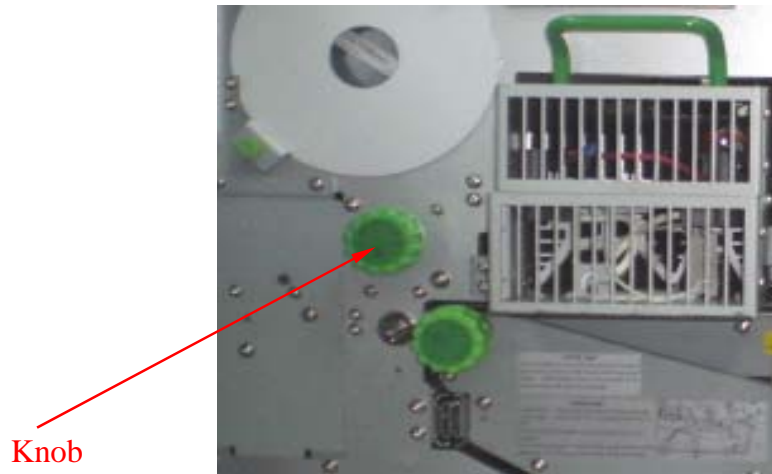
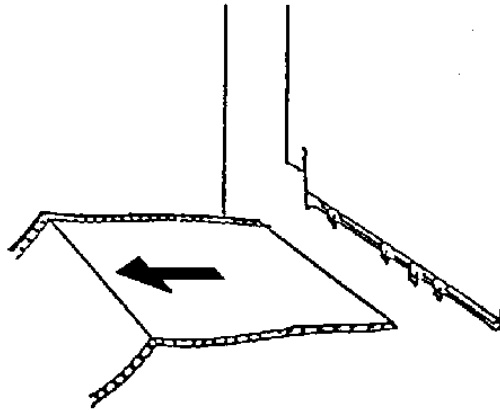


Fig. 5-3

(e) Separate the fanfold paper from the paper exit.



Separate the paper

Fig. 5-4

- (f) Open the two paper holder covers then pull the fanfold paper that is separated from the paper exit.

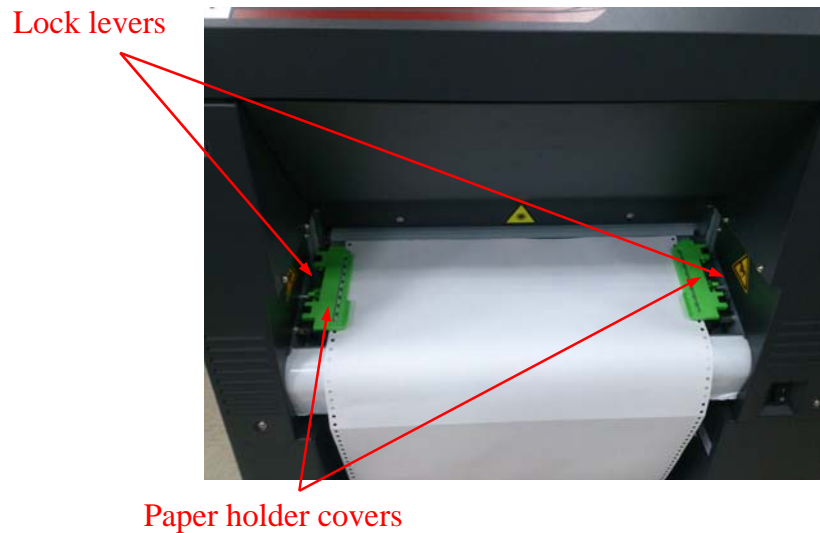


Fig. 5-5

- (g) Turn the green lever of the transport unit to the right and push the transport unit back to its original location. Then turn knob B towards "LOCK" position fully, and then close the waste toner box unit.
- (h) Close the front cover (upper). Press "ON Line" key on the operation panel to clear the error message. To set the printer in the on-line state, press "ON Line" key again.

5.2 Error Code

Code	Message Displayed
01	01-FRONT COVER OPEN
02	02-NO FANFLD PAPER (PES)
03	03-PAPER JAM AT FUSER (PTPS)
04	04-JAM AFTER FUSING (PMS)
05	05-PAPER OUTPUT JAM (POPS)
07	07-SCUFF LEVER OPEN
0C	0C-ELEVATOR MOTOR (UP)
0D	0D-ELEVATOR MOTOR (DOWN)
12	12-PAPER (PTPS) IN FUSER
13	13-PAPER (POPS) IN PAPER OUT
16	16-PAPER POSITION (PTS)
17	17-HIGH-VOLTAGE FAILURE
18	18-DRUM MOTOR FAILURE
19	19-SURFACE POTENTIAL (HIGH)
1A	1A-SURFACE POTENTIAL (LOW)
1B	1B-PRE-CHARGER NOT INSTALLED
1E	1E-FLASH POWER FAILURE
1F	1F-FLASH FAILURE
20	20-FUSER UNIT OVERHEAT
22	22-DEVELOPER MOTOR FAILURE
23	23-DEV UNIT SET INCORRECTLY
24	24-CLEANER SET INCORRECTLY
25	25-NO TRANSFER CHARGER
26	26-NO CLEANING UNIT
28	28-WASTE TONER BOX FULL

Code	Message Displayed
29	29-NO WASTE TONER BOX
2A	2A-NO TONER
2C	2C-TONER DENSITY (LOW)
2D	2D-TONER NEAR END
32	32-LED ARRAY OVERHEAT
33	33-REAR COVER OPEN
38	38-MEMORY FAIL
39	39-HIGHVOL FAIL +HV1 MAIN-CHG
3A	3A-HIGHVOL FAIL +HV2 PRE-CHARGE
3B	3B-HIGHVOL FAIL -HV TRANS-CHG
3C	3C-HIGHVOL FAIL +HV3 SEPERA-CHG
3D	3D-HIGHVOL FAIL +DRL DEV-BIAS
3E	3E-HIGHVOL FAIL -V1, -V2 CLEAN-BIAS
53	53-STACKER COMMAND FAIL
54	54-STACKER ENTRY ERROR
55	55-STACKER FOLDING FAIL
56	56-STACKER FULL
57	57-STACKER TABLE NOT READY

5.3 Error Code Descriptions and Countermeasures

Code	Descriptions	Check Point	Countermeasure
01	Front cover open	The front cover is not properly closed.	Close the front cover.
		The front cover is properly closed.	Call service engineer.
02	No fanfold paper	The fanfold paper is not supplied between paper empty sensor (PES) guide and the printer body.	Supply the fanfold paper between the paper empty sensor guide and the printer body.
		The fanfold paper is supplied between paper empty sensor (PES) guide and the printer body.	Call service engineer.
03	Paper jam at fuser (PTPS)	PTPS LED is blinking: Paper is jammed at fuser.	See “ 5.1 Paper Jam ” to remove the jammed paper. If the error is still not cleared, call service engineer.
04	Paper jam after fusing (PMS)	PMS LED is blinking: Paper is jammed after fusing. The green lever of transport unit is not upward.	See “ 5.1 Paper Jam ” to remove the jammed paper. Lift the green lever of transport unit. If the error is still not cleared, call service engineer.
05	Paper jam at paper output section (POPS)	POPS LED is blinking: Paper is jammed at paper out section.	See “ 5.1 Paper Jam ” to remove the jammed paper. If the error is still not cleared, call service engineer.
07	Scuff lever open	Knob B is not in the “LOCK” position.	Turn knob B to “LOCK” position.
		Knob B is in the “LOCK” position.	Call service engineer.
0C	Elevator motor failure (during upward movement)	The transport unit is not pushed in properly.	Push in the transport unit properly.
		The transport unit is pushed in properly.	Call service engineer.
0D	Elevator motor failure (during downward movement)	The transport unit is not pushed in properly.	Push in the transport unit properly.
		The transport unit is pushed in properly.	Call service engineer.
12	Paper remaining in fuser section (PTPS)	Paper is remaining in the fuser section (at PTPS position).	Remove the remaining paper.
		Paper is not remaining in the fuser section (at PTPS position).	Clean the PTPS, and set the transport unit properly. If the error is still not cleared, call service engineer.

Code	Descriptions	Check Point	Countermeasure
13	Paper remaining in paper output section (POPS)	Paper is remaining in the paper output section (at POPS position).	Remove the remaining paper.
		Paper is not remaining in the paper output section (at POPS position).	Call service engineer.
16	Abnormal paper position	Tractor position is not properly set (paper is too tight or too loose).	Set the tractor position properly.
		Paper position is not correctly set.	Set the paper position correctly.
		Paper position is set correctly.	Call service engineer.
17	High voltage failure	Main charger, pre-charger, transfer charger, or developing unit is not properly set.	Set the main charger, pre-charger, transfer charger, or developing unit properly.
		Main charger, pre-charger, transfer charger, or developing unit is properly set.	Call service engineer.
18	Drum motor failure (Abnormal rotation speed)	OPC drum is not properly set.	Set the OPC drum properly.
		Turn the POWER switch ON. The drum motor does not operate at the proper timing during the power-on initialization process or is not normal (rotation speed is not stable).	Replace the cleaning unit. If the error is still not cleared, call service engineer.
		Turn the POWER switch ON. The drum motor operates at the proper timing during the power-on initialization process and is normal (rotation speed is stable).	Call service engineer.
19	Surface potential too high		Reinstall the main charger. If the error is still not cleared, call service engineer.
1A	Surface potential too low	Main charger is not properly set.	Set the main charger properly.
		Main charger wire is dirty.	Clean the main charger wire. If the error is still not cleared, call service engineer.
1B	No Pre-Charger	Pre-charger is not set.	Set the pre-charger.
		Pre-charger is set.	Call service engineer.
1E	Flash power supply failure	Fuser unit is not properly set.	Set the fuser unit properly.
		Flash power supply is overheated.	Let the flash power supply cool for a while with the power on.
		Fuser unit is set properly.	Call service engineer.

Code	Descriptions	Check Point	Countermeasure
1F	Flash failure	Flash power supply AC IN voltage is normal.	Check AC power source.
		Flash power supply AC IN voltage is not normal.	Call service engineer.
20	Fuser unit overheat	Fuser unit is not properly set.	Set the fuser unit properly.
		Fuser unit exit blower is stopped or the rotation speed of the blower is too low.	Call service engineer.
		Fuser unit cooling fan is stopped.	Call service engineer.
22	Developing motor failure (Abnormal rotation speed)	Turn the POWER switch ON. The developing motor does not operate or is not normal at the proper timing during the power-on initialization process.	Call service engineer.
23	Developing unit set incorrectly	The developing unit is not properly set.	Set the developing unit properly.
		The developing unit is properly set.	Call service engineer.
24	Cleaner unit set incorrectly	The green lock lever of the cleaning unit is set at the "OPEN" position.	Turn the green lock lever of the cleaning unit to the "LOCK" position.
		The green lock lever of the cleaning unit is set at the "LOCK" position.	Call service engineer.
25	No Transfer-Charger	Transfer charger is not set.	Set the transfer charger.
		Transfer charger is set.	Call service engineer.
26	No cleaning unit	Cleaning unit is not set.	Set the cleaning unit.
		Cleaning unit is set.	Call service engineer.
28	Waste toner box full	Waste toner in the waste toner box reaches the full level.	Replace the waste toner box.
		Waste toner in the waste toner box does not reach the full level.	Clean the waste toner full sensor. If the error is still not cleared, call service engineer.
29	No waste toner box	Waste toner box is not set.	Set the waste toner box.
		Waste toner box is set.	Call service engineer.
2A	No toner	An oscillation sound is emitted by the toner empty sensor when there is not enough toner in the developing unit.	Replace with a new toner cartridge.
		There is enough toner in the developing unit.	Call service engineer.
2C	Toner density too low	There is enough toner in the developing unit.	Call service engineer.

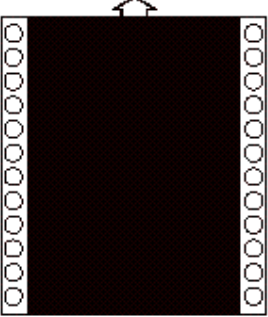
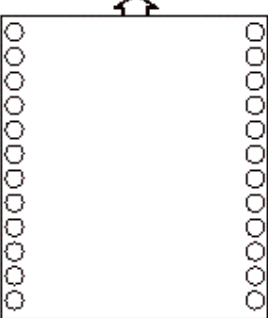
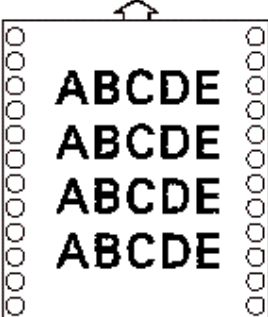
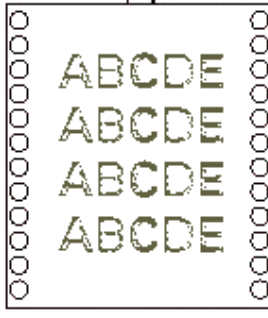
Code	Descriptions	Check Point	Countermeasure
32	LED array overheat	Fuser exit blower or fuser unit cooling fan is stopped.	Call service engineer.
		The rear cover side of the printer is too close to the wall.	Make enough space between the rear cover side of the printer and the wall. If the error is still not cleared, call service engineer.
33	Rear cover open	Rear cover is removed.	Install the rear cover.
		Rear cover is installed.	Call service engineer.
38	Memory fail		Call service engineer.
39	High Voltage Failure - +HV1 Main Charge	Main charger is not properly set.	Set the main charger properly.
		Main charger is not normal.	Replace the main charger. If the error is still not cleared, call service engineer.
3A	High Voltage Failure - +HV2 Pre-Charge	Pre-charger is not properly set.	Set the pre-charger properly.
		Pre-charger is not normal.	Replace the pre-charger. If the error is still not cleared, call service engineer.
3B	High Voltage Failure - -HV Transfer Charge	Transfer charger is not properly set.	Set the transfer charger properly.
		Transfer charger is not normal.	Replace the transfer charger. If the error is still not cleared, call service engineer.
3C	High Voltage Failure - +HV3 Separation Charge	Separation charger is not properly set.	Set the separation charger properly.
		Separation charger is not normal.	Replace separation charger. If the error is still not cleared, call service engineer.
3D	High Voltage Failure - +DRL Developing Bias	Developing unit is not normal.	Replace the developing unit.
		Developing unit is normal.	Call service engineer.
3E	High Voltage Failure - -V1, -V2 Cleaning Bias		Call service engineer.

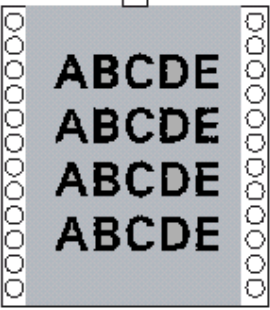
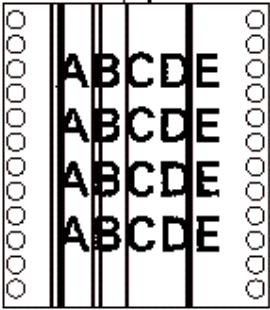
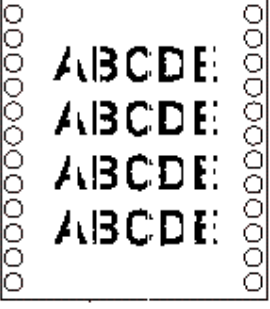
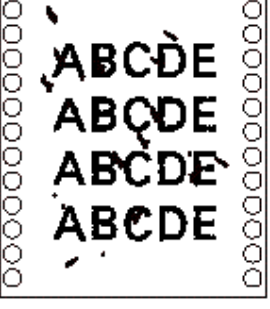
Code	Descriptions	Check Point	Countermeasure
53	Stacker communication fail	The stacker interface cable connector is not properly plugged into the printer connector.	Properly plug the stacker interface cable connector into the printer connector.
		The stacker interface cable connector is plugged into the printer connector properly.	Call service engineer.
54	Stacker entry fail	The first page of paper does not enter into the gap between front/rear swing paper guide plates.	Have the first page of paper enter into the gap between front/rear swing paper guide plates.
		The first page of paper does enter into the swing plate unit.	Call service engineer.
		Paper is stacked at front paper guide unit and the roller unit does not rotate.	Call service engineer.
55	Stacker folding fail	Paper is not folded properly.	Manually fold the improperly folded paper in proper manner.
		Paper is properly folded.	Call service engineer.
		The stacker table not descend when pressing the table down button.	Call service engineer.
		The stacker table does descend when pressing the table down button.	Call service engineer.
56	Stacker full	The stacker table is in the lowest position.	Lift up the stacker table by hand.
		The stacker table is not in the lowest position.	Call service engineer.
57	Stacker table not ready	The stacker table is in the highest position.	Call service engineer.
		The stacker table is not in the highest position	Lift up the stacker table to the highest position by hand. If the stacker table cannot be lift up to the highest position, call service engineer.

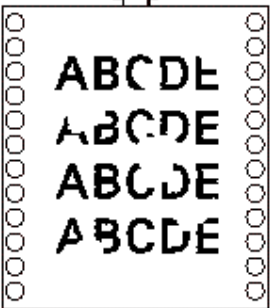
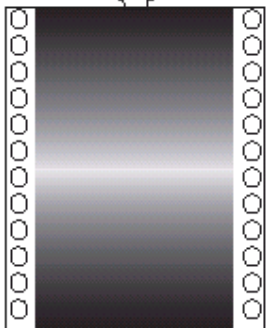
5.4 Developer and Toner Troubleshooting

Sympton	Check Point	Possible Cause	Countermeasure
Developer Overflow	The developer overflows out to the front face of the developing roller.	The inner magnet roller is rotating, but the rotation of the sleeve roller stops.	Use a vacuum cleaner to clear the overflowed developer. Then replace the developing unit. If the sympton is not cleared, call service engineer.
Toner Discharge	Small amount of toner is discharged from below the developing roller sometimes.	Toner is discharged from where the PU sealed on the front face of the developing roller peeled off.	Attach the peeled seal, or replace the developing unit.
Toner Odor	Toner oder is released during fusing.	The air filter has reached its service life.	Replace the air filter.
	Toner oder is released from the air filter blower opening.	1.The air filter is not set. 2.The frame of the air filter is strained.	1.Set the air filter correctly. 2.Replace the air filter.
	Toner oder is released from the fuser exit blower or the rear cover fan (upper)?	1.The air filter blower is stopped. 2.The fuser cover glass is not set or is broken.	1.Check the power source of the air filter blower. On MAINTENANCE menu, select OPERATION sub menu and then select "1E:AIR FILTER" to check the air filter blower. 2.Call service engineer.

5.5 Image Quality Troubleshooting

Sympton	Possible Cause	Countermeasure
<p>Black Print</p> 	<p>1.Main charger is not installed</p>	<p>1.Set the main charger.</p>
<p>Blank Print</p> 	<p>1.Developing unit is not installed properly. 2.Transfer charger is abnormal.</p>	<p>1.Set the developing unit properly. 2.Replace the transfer charger.</p>
<p>Dark Image</p> 	<p>1.OPC drum has reached its service life. 2.The image density setting is not correct.</p>	<p>1.Replace the OPC drum. 2.Call service engineer.</p>
<p>Light Image</p> 	<p>1.Moistened paper is used. 2.OPC drum has reached its service life. 3.The image density setting is not correct. 4.The OPC drum is not completely grounded. 5.Developing unit has reached its service life.</p>	<p>1.Replace the paper. 2.Replace the OPC drum. 3.Call service engineer. 4.Call service engineer.. 5.Replace the developing unit.</p>

Sympton	Possible Cause	Countermeasure
<p>Fog</p> 	<ol style="list-style-type: none"> 1.The external light, such as the direct rays of the sun, entering the machine. 2.OPC drum has reached its service life. 	<ol style="list-style-type: none"> 1.Shut off the external light. 2.Replace the OPC drum.
<p>Black Stripe</p> 	<ol style="list-style-type: none"> 1.Main charger is dirty. 2.OPC drum is damaged or stained. 3.Cleaning unit blade is peeled or degraded. 	<ol style="list-style-type: none"> 1.Clean the main charger. 2.Clean or replace the OPC drum. 3.Replace cleaning unit blade.
<p>White Stripe</p> 	<ol style="list-style-type: none"> 1.Transfer charger is dirty. 2.Foreign substance is on OPC drum. 3.OPC drum is damaged. 4.Foreign substance is caught between doctor blade and developing roller. 	<ol style="list-style-type: none"> 1.Clean or replace the transfer charger. 2.Clean the OPC drum. 3.Replace the OPC drum. 4.Clean the developing unit.
<p>Black Spot</p> 	<ol style="list-style-type: none"> 1.Foreign substance is on OPC drum. 2.OPC drum is damaged. 	<ol style="list-style-type: none"> 1.Clean the OPC drum. 2.Replace the OPC drum.

Sympton	Possible Cause	Countermeasure
<p>Whitening</p> 	<ol style="list-style-type: none"> 1.The paper width of tractor position is not correctly set. 2.Moistened paper is used. 3.Transfer charger is not correctly set. 	<ol style="list-style-type: none"> 1.Adjust the tractor to correct position. 2.Replace the paper. 3.Set the transfer charger correctly.
<p>Uneven Density (Inclination)</p> 	<ol style="list-style-type: none"> 1.Moistened paper is used. 2.Developing unit is not correctly set. 3.OPC drum is not correctly set. 	<ol style="list-style-type: none"> 1.Replace the paper. 2.Set the developing unit correctly. 3.Set the OPC drum correctly.